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ABSTRACT

Presented is the first of three reports by the National Science Foundation (NSF) on the 1974 National Survey of Scientists and Engineers conducted by the Bureau of Census. The survey was designed to measure the changes, every two years, in the demographic, educational, and employment characteristics of the scientists and engineers identified in the 1970 Census of Population. This report presents detailed information on the 1974 National Sample with emphasis on the demographic and educational characteristics. Almost 1,100,000 scientists and engineers were represented by this National Sample. The publication is divided into two sections: (1) graphic highlights, and (2) selected characteristics. Technical notes, detailed statistical tables, and a reproduction of the 1974 questionnaire and reference lists are included in the appendix. (Author/EB)

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ED128190

Surveys of Science Resources Series
National Science Foundation
NSF 75-333

# Characteristics of the National Sample of Scientists and Engineers 1974

## Part 1. Demographic and Educational

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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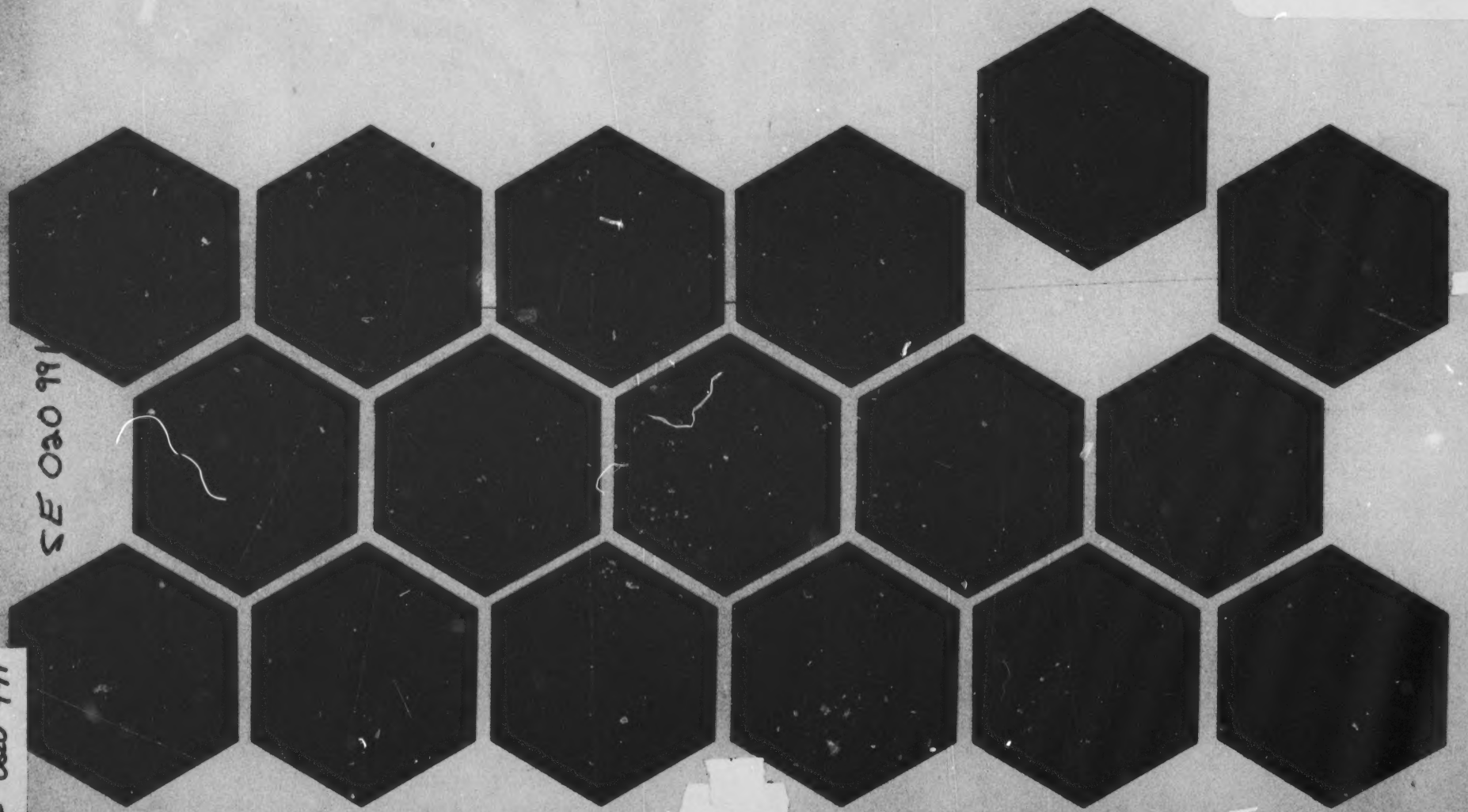

# Related Publications

| REPORTS | NSF NO. | Price |
|---|---|---|
| The 1972 Scientist and Engineer Population Redefined. Volume 2. Labor Force and Employment Characteristics | 75-327 | In press |
| The 1972 Scientist and Engineer Population Redefined. Volume 1. Demographic, Educational, and Professional Characteristics | 75-313 | $3.70 |
| Characteristics of Doctoral Scientists and Engineers in the United States, 1973. A Report Based on the National Science Foundation's Manpower Characteristics System | 75-312 | $1.15 |
| Detailed Statistical Tables. Characteristics of Doctoral Scientists and Engineers in the United States, 1973. A Report Based on the National Science Foundation's Manpower Characteristics System | 75-312-A | —— |
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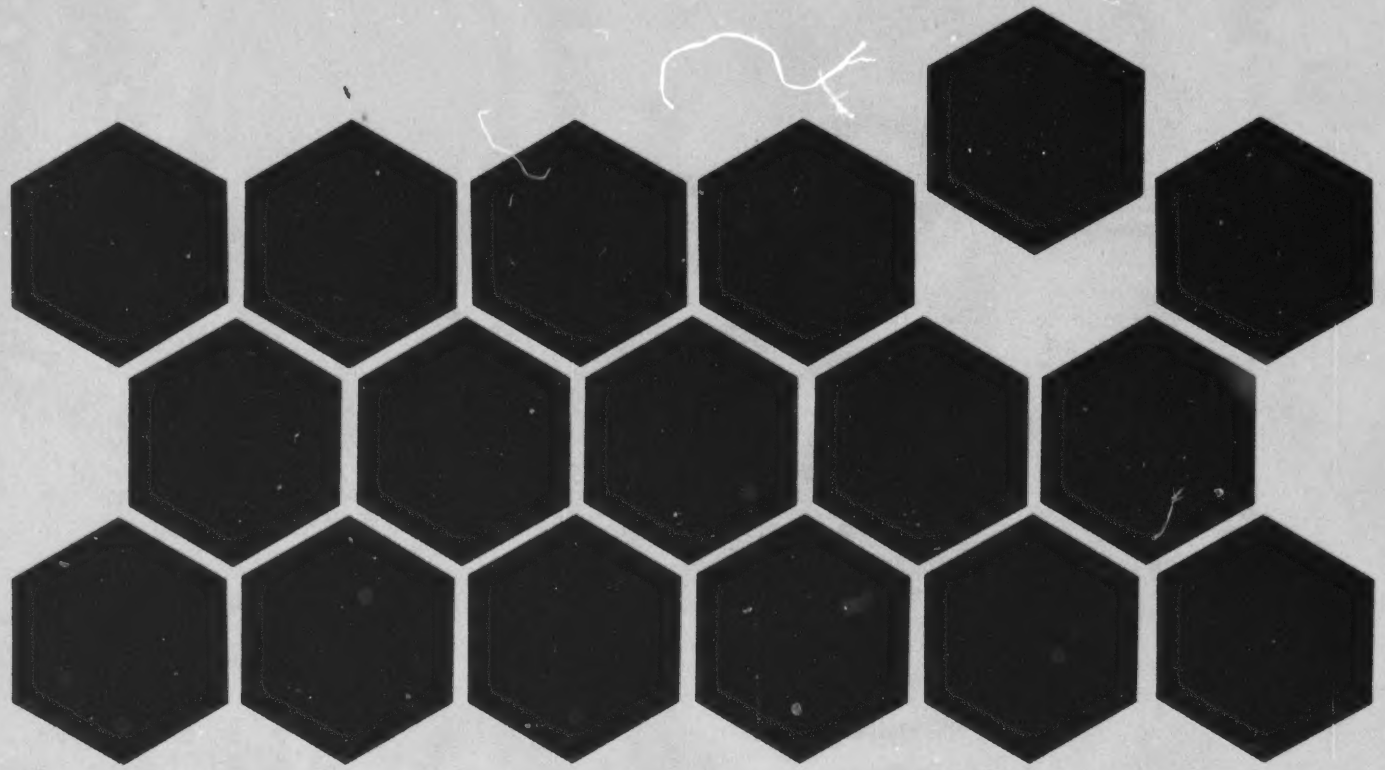
Surveys of Science Resources Series
National Science Foundation
NSF 75-333

# Characteristics of the National Sample of Scientists and Engineers 1974

## Part 1. Demographic and Educational



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# FOREWORD

The dynamics of the scientific and engineering population of the United States have changed markedly in the past few years. The unemployment problem of 1970-71, the start of a declining college and university population, and the recent economic condition of the country have all had their effects on individual scientists and engineers. To assist the Foundation in formulating and implementing sound and responsive scientific policies and programs for the Nation, the Manpower Characteristics Systems was initiated in 1971. This system provides the means by which selected information on scientists and engineers is made available. The system consists of three subsystems: the Doctoral Roster of Scientists and Engineers, Survey of New Entrants to Science and Engineering, and the National Sample of Scientists and Engineers which is the subject of this report.

This is the first of three reports by the National Science Foundation (NSF) on the 1974 National Survey of Scientists and Engineers (National Sample) which was conducted by the Bureau of Census under the sponsorship of NSF. The 1974 survey was the first in a series of longitudinal surveys designed to measure the changes—every two years—in the demographic, educational, and employment characteristics of the Nation's scientists and engineers who were identified in the 1970 Census of Population.

This report presents detailed information on the 1974 demographic and educational characteristics of the National Sample. The subsequent two reports will focus upon employment and geographic characteristics of the sample.

The report was prepared in the Division of Science Resources Studies of the National Science Foundation. Overall guidance was provided by Robert W. Cain, Head, Manpower Studies Section.

We would like to thank the 50,000 scientists and engineers in the sample who were surveyed and took the time to respond to the questionnaire. It is their cooperation that made this report possible.

Charles E. Falk
Director, Division of Science
Resources Studies

December 1975

# general notes

Almost 1,100,000 scientists and engineers were represented by the National Sample of Scientists and Engineers in 1974; this number accounted for approximately two-thirds of the science and engineering population in 1974. The data do not include those scientists and engineers who have entered science and engineering since April 1970 when the Census of Population was conducted.

General detail may not add to total because of rounding.

# acknowledgments

This survey was planned and directed by J. James Brown, Study Director, Manpower Characteristics Studies Group. The report was prepared by Nancy M. Conlon with the assistance of Gayle F. Barker and John A. Scopino.

The survey was conducted by the Bureau of the Census. Principal participants there were Paula J. Schneider, Mary K. Friday, Thomas J. Palumbo, Ann M. Gifford, and Patricia L. Marks. Overall direction was provided by Murray S. Weitzman, Assistant Division Chief (Socioeconomic Statistics Programs), Population Division. Invaluable assistance by all is gratefully acknowledged.

# CONTENTS


| | Page |
|---|---|
| Introduction | vi |
| Section I. Graphic Highlights | 1 |
| Section II. Selected Characteristics | 6 |
| Appendixes: | |
| A. Technical Notes | 12 |
| B. Detailed Statistical Tables | 25 |
| C. A Listing of Detailed Statistical Tables in Parts II and III | 74 |
| D. Reproduction of 1974 Questionnaire and Reference Lists | 75 |

# INTRODUCTION

This is the first of three reports on the 1974 National Survey of Scientists and Engineers. It presents demographic and educational data for members of the National Sample who responded to the 1974 survey and met the requirements for inclusion in one of eight fields of science or engineering in 1974; these persons and all others in the National Sample were identified as scientists and engineers in the 1970 Census of Population. Separate statistics are shown for women as well as for both sexes. The second report will present employment information; the third, geographic information.[1]

The 1974 National Sample was the first in a series of planned longitudinal surveys to be conducted biennially on a sample of 50,000 individuals who were identified as scientists and engineers in the 1970 Census of Population. Findings from the 1974 and future surveys will enable investigators to examine changes in characteristics of scientists and engineers over a substantial period of time, as well as providing information for a specific time period.

The National Sample serves as a source for measuring changes in characteristics of scientists and engineers who were in the 1970 employed labor force. It also provides timely information on a sizable segment of the Nation's scientific and engineering manpower at any one time.

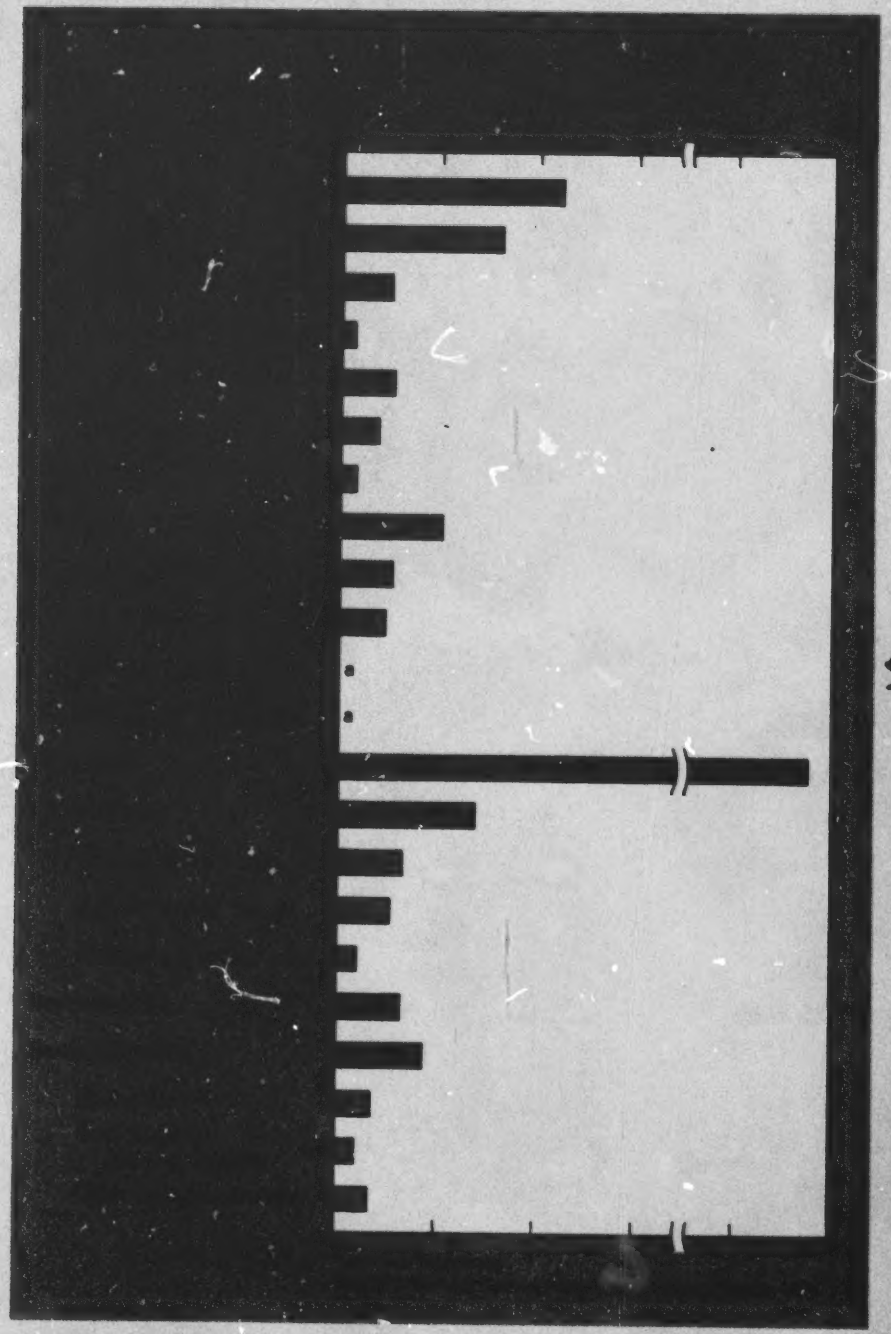
Section I of this report contains graphic highlights of the data presented herein; Section II presents tables of selected characteristics. The technical notes in appendix A contain information on the sample; the questionnaire; definitions and explanations used in the survey; weighting and estimating procedures; and standard errors of totals and percentages. Detailed statistical tables are included in appendix B. The questionnaire and reference lists used in the survey are reproduced in appendix D.

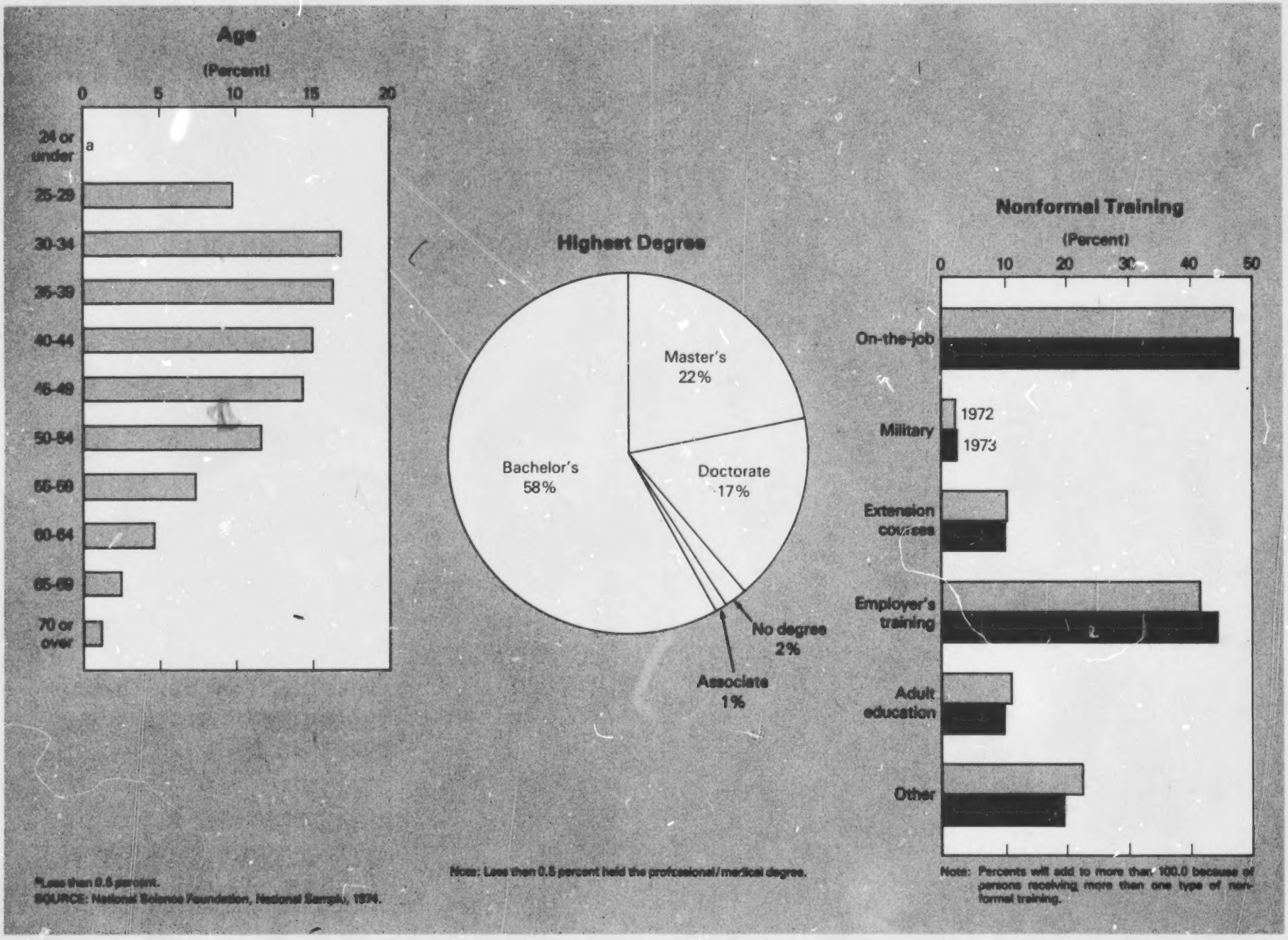
[1] See appendix C for the kinds of information to be included in parts II and III.

# Section I.

# GRAPHIC HIGHLIGHTS

Total Scientists and Engineers
in the National Sample



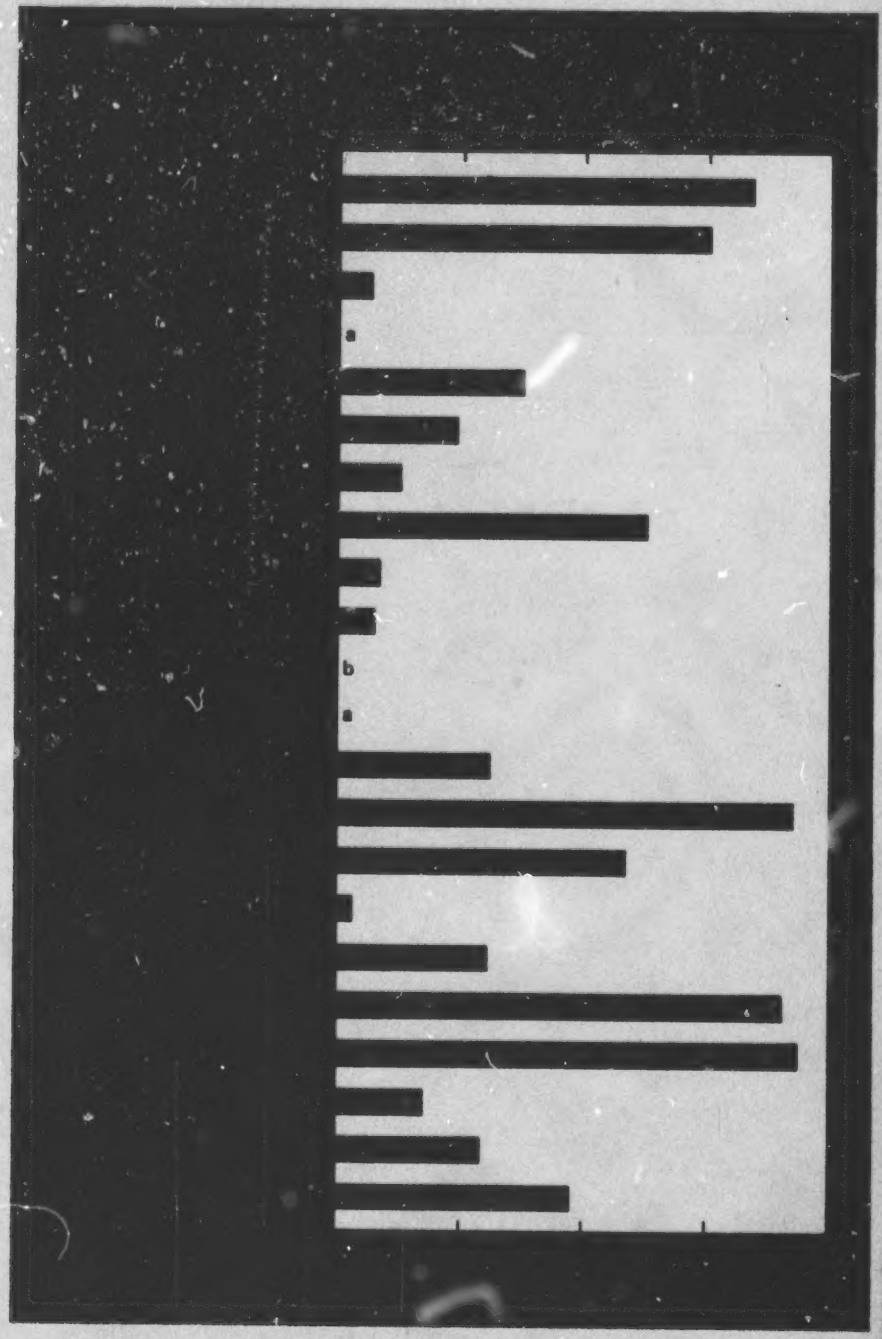


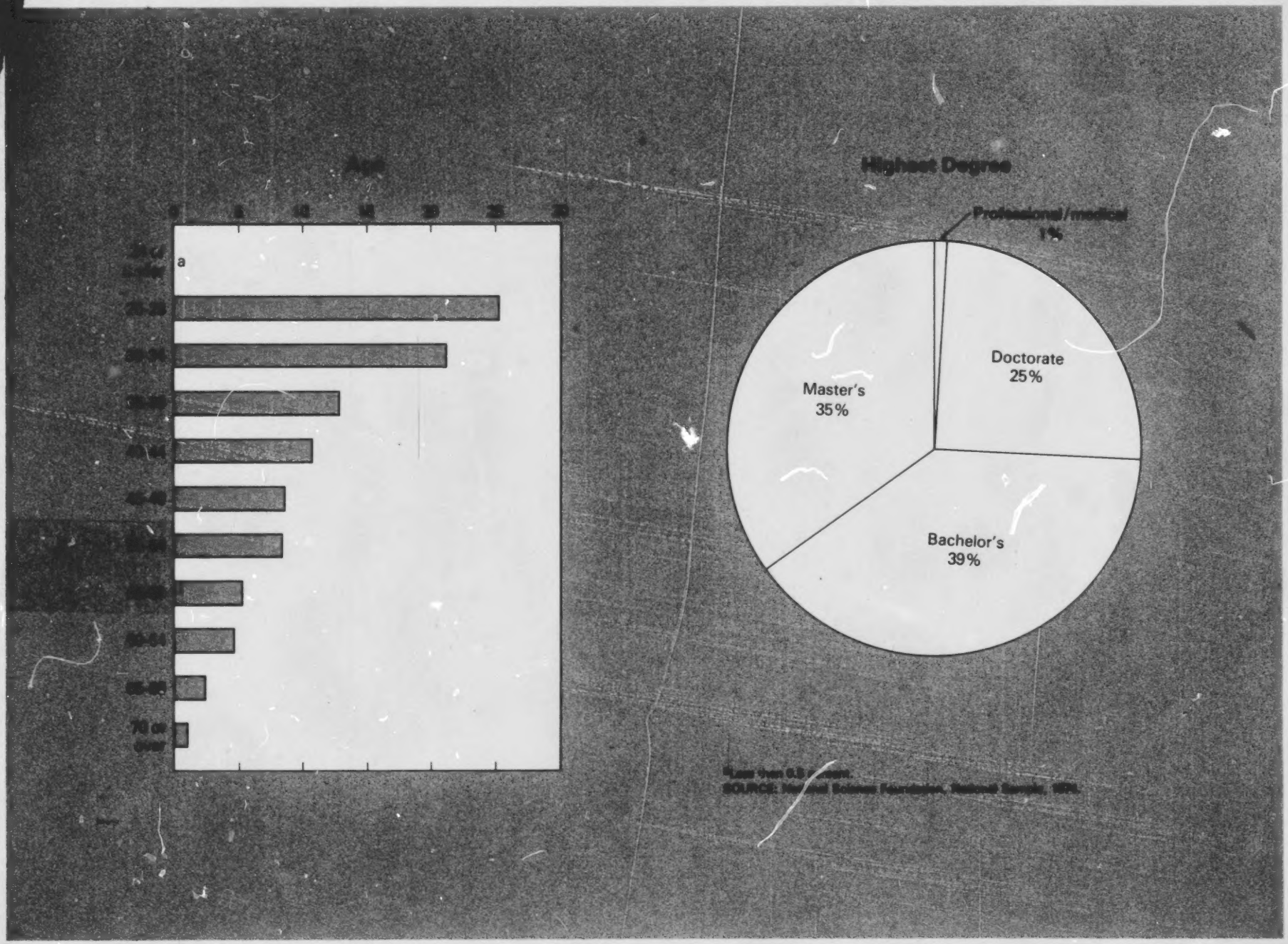

*Less than 0.5 percent.
SOURCE: National Science Foundation, National Sample, 1974.

Note: Less than 0.5 percent held the professional/medical degree.

Note: Percents will add to more than 100.0 because of persons receiving more than one type of nonformal training.

WOMEN




Age
a
Highest Degree
Professional/medical
1%
Doctorate
25%
Master's
35%
Bachelor's
39%

13

# Section II.

# SELECTED CHARACTERISTICS

# TOTAL SCIENTISTS AND ENGINEERS IN THE NATIONAL SAMPLE

## FIELD

Engineers, the largest group in the National Sample, were followed by physical scientists, life scientists, and computer specialists.

| Field | Number | Percent |
|---|---|---|
| Total, all fields | 1,079,698 | 100.0 |
| Physical scientists | 121,011 | 11.2 |
| Chemists | 87,334 | 8.1 |
| Physicists/astronomers | 27,519 | 2.5 |
| Other physical scientists | 6,158 | .6 |
| Mathematical scientists | 27,833 | 2.6 |
| Mathematicians | 20,076 | 1.9 |
| Statisticians | 7,757 | .7 |
| Computer specialists | 55,186 | 5.1 |
| Environmental scientists | 29,466 | 2.7 |
| Earth scientists | 24,589 | 2.3 |
| Oceanographers | 1,563 | .1 |
| Atmospheric scientists | 3,314 | .3 |
| Engineers | 687,911 | 63.8 |
| Life scientists | 75,462 | 7.0 |
| Biological scientists | 35,935 | 3.3 |
| Agricultural scientists | 28,790 | 2.7 |
| Medical scientists | 10,737 | 1.0 |
| Psychologists | 34,889 | 3.2 |
| Social scientists | 47,940 | 4.4 |
| Economists | 19,754 | 1.8 |
| Sociologists/anthropologists | 11,158 | 1.0 |
| Other social scientists | 17,028 | 1.6 |

## RACE

Very few scientists and engineers were members of minority racial groups—less than 1 in 20.

| Race | Number | Percent |
|---|---|---|
| Total | 1,079,698 | 100.0 |
| White/Caucasian | 1,039,010 | 96.2 |
| Black/Negro | 11,102 | 1.0 |
| American Indian | 903 | .1 |
| Chinese, Japanese, Korean | 23,497 | 2.2 |
| Other | 5,186 | .5 |

## SEX

Ninety-five percent were male with engineers reporting the highest percent of men to women.

| Sex | Number | Percent |
|---|---|---|
| Total | 1,079,698 | 100,0 |
| Men | 1,025,741 | 95.0 |
| Women | 53,957 | 5.0 |

## HIGHEST DEGREE

Most held bachelor's degrees as their highest degree. The master's degree holders accounted for about one-fifth whereas one in six held a doctorate.

| Highest degree | Number | Percent |
|---|---|---|
| Total | 1,079,698 | 100,0 |
| Doctorate | 180,870 | 16.8 |
| Professional/medical | 3,248 | .3 |
| Master's | 242,289 | 22.4 |
| Bachelor's | 620,396 | 57.5 |
| Associate | 12,539 | 1.2 |
| Other degree | 101 | (1) |
| No degree | 20,255 | 1.9 |

[1] Less than 0.05 percent.

## AGE

The median age in 1974 was 41 years. Almost one-half of the women scientists and engineers were under age 35 whereas only one-quarter of the men were under age 35.

| Age | Number | Percent |
|---|---|---|
| Total | 1,079,698 | 100.0 |
| 24 or under | 2,137 | .2 |
| 25-29 | 106,274 | 9.8 |
| 30-34 | 182,024 | 16.9 |
| 35-39 | 175,473 | 16.3 |
| 40-44 | 162,207 | 15.0 |
| 45-49 | 155,926 | 14.4 |
| 50-54 | 125,831 | 11.7 |
| 55-59 | 78,795 | 7.3 |
| 60-64 | 51,134 | 4.7 |
| 65-69 | 26,963 | 2.5 |
| 70 and over | 12,934 | 1.2 |

## NONFORMAL TRAINING

Employer training courses and on-the-job training were the most frequently reported types of nonformal training.

| Type of training | 1972 number | 1973 number |
|---|---|---|
| Total | 1,079,698 | 1,079,698 |
| With nonformal training | [1]397,438 | [1]406,427 |
| On-the-job | 187,159 | 194,367 |
| Military | 8,595 | 9,192 |
| Extension courses | 41,234 | 41,536 |
| Employer's training | 165,691 | 180,372 |
| Adult education | 45,180 | 44,715 |
| Other | 89,680 | 81,018 |
| No nonformal training | 471,772 | 488,886 |
| Nonformal training not reported | 210,488 | 184,385 |

[1] Detail will not add to total because persons can be recipients of more than one type of training.

## PROFESSIONAL IDENTIFICATION

About 1 out of every 10 scientists and engineers considered himself an administrator or a manager.

| Professional identification | Number | Percent |
|---|---|---|
| Total | 1,079,698 | 100.0 |
| Physical scientists | 116,266 | 10.8 |
| Mathematical scientists | 24,907 | 2.3 |
| Computer specialists | 54,759 | 5.1 |
| Engineers | 571,997 | 53.0 |
| Biological scientists | 73,150 | 6.8 |
| Social scientists | 67,389 | 6.2 |
| Administrators/managers | 114,681 | 10.6 |
| Teachers | 2,606 | .2 |
| Health occupations | 522 | (1) |
| Technicians/technologists | 1,040 | .1 |
| Other | 4,281 | .4 |
| No report | 48,100 | 4.5 |

[1] Less than 0.05 percent.

## MAJOR SUBJECT OF HIGHEST DEGREE

Fifty-five percent of the scientists and engineers had a major subject in engineering. This is a smaller percent than that of engineers to the total number of scientists and engineers in the field distribution.

| Major subject | Number | Percent |
|---|---|---|
| Total | 1,079,698 | 100.0 |
| Chemistry | 80,798 | 7.5 |
| Physics/astronomy | 49,062 | 4.5 |
| Mathematical sciences | 44,706 | 4.1 |
| Computer science | 6,945 | .6 |
| Earth, space, and marine sciences | 26,128 | 2.4 |
| Engineering | 592,420 | 54.9 |
| Biological sciences | 49,969 | 4.6 |
| Agricultural sciences | 30,500 | 2.8 |
| Medical sciences | 6,175 | .6 |
| Psychology | 36,083 | 3.3 |
| Economics | 22,095 | 2.0 |
| Sociology/anthropology | 11,922 | 1.1 |
| Other social sciences | 15,337 | 1.4 |
| Business and commerce | 30,549 | 2.8 |
| All other subjects | 47,100 | 4.4 |
| No report | 9,654 | .9 |
| No degree | 20,255 | 1.9 |

# WOMEN

## FIELD

Over one-half of the women in the National Sample were in four fields: psychology, chemistry, computer science, and biology.

| Field | Number | Percent |
|---|---|---|
| Total | 53,957 | 100.0 |
| Physical scientists | 9,075 | 16.8 |
| Chemists | 8,103 | 15.0 |
| Physicists/astronomers | 735 | 1.4 |
| Other physical scientists | 237 | .4 |
| Mathematical scientists | 4,038 | 7.5 |
| Mathematicians | 2,664 | 4.9 |
| Statisticians | 1,374 | 2.5 |
| Computer specialists | 6,747 | 12.5 |
| Environmental scientists | 894 | 1.7 |
| Earth scientists | 817 | 1.5 |
| Oceanographers | (1) | (1) |
| Atmospheric scientists | 77 | .1 |
| Engineers | 3,359 | 6.2 |
| Life scientists | 9,979 | 18.5 |
| Biological scientists | 6,334 | 11.7 |
| Agricultural scientists | 340 | .6 |
| Medical scientists | 3,305 | 6.1 |
| Psychologists | 9,784 | 18.1 |
| Social scientists | 10,081 | 18.7 |
| Economists | 1,900 | 3.5 |
| Sociologists/anthropologists | 3,119 | 5.8 |
| Other social scientists | 5,062 | 9.4 |

[1] No cases reported.

## RACE

Blacks had the highest proportion of representation for minority groups among women, but the Chinese, Japanese, and Koreans represented a higher percentage of their female population in the United States.

| Race | Number | Percent |
|---|---|---|
| Total | 53,957 | 100.0 |
| White/Caucasian | 50,037 | 92.7 |
| Black/Negro | 1,714 | 3.2 |
| American Indian | 45 | .1 |
| Chinese, Japanese, Korean | 1,422 | 2.6 |
| Other | 739 | 1.4 |

## AGE

The median age of women was 35 years in 1974.

| Age | Number | Percent |
|---|---|---|
| Total | 53,957 | 100.0 |
| Under 25 | 73 | .1 |
| 25-29 | 13,582 | 25.2 |
| 30-34 | 11,457 | 21.2 |
| 35-39 | 6,924 | 12.8 |
| 40-44 | 5,755 | 10.7 |
| 45-49 | 4,635 | 8.6 |
| 50-54 | 4,478 | 8.3 |
| 55-59 | 2,803 | 5.2 |
| 60-64 | 2,426 | 4.5 |
| 65-69 | 1,304 | 2.4 |
| 70 and over | 520 | 1.0 |

## HIGHEST DEGREE

Almost the same number of S/E women held master's degrees as held bachelor's degrees.

| Highest degree | Number | Percent |
|---|---|---|
| Total | 53,957 | 100.0 |
| Doctorate | 13,389 | 24.8 |
| Professional/medical | 285 | .5 |
| Master's | 19,213 | 35.6 |
| Bachelor's | 21,055 | 39.0 |
| Associate | 15 | (1) |
| Other | (2) | (2) |
| No degree | (2) | (2) |

[1] Less than 0.05 percent.
[2] No cases reported.

# APPENDIXES

A. Technical Notes
B. Detailed Statistical Tables
C. A Listing of Detailed Statistical Tables in Parts II and III
D. Reproduction of 1974 Questionnaire and Reference Lists

# APPENDIX A

# Technical Notes

## The 1974 National Sample

The 1974 National Survey of Scientists and Engineers was the first in a series of planned longitudinal surveys based on the National Sample. A previous survey, the 1972 Professional, Technical, and Scientific Manpower Survey was conducted among a nationwide sample of approximately 150,000 persons who were recorded in the 1970 Census of Population as being in the experienced civilian labor force in one of 65 engineering, scientific, or related occupations. Also, the survey included a small sample of persons who had completed four or more years of college but were not in any of the specified occupations. Based on responses in the 1972 survey and on criteria established by the National Science Foundation, approximately 51,000 persons from the 1972 survey sample (excluding the small sample of college graduates) were chosen as the National Sample for the 1974 National Survey of Scientists and Engineers.[1] Survey questionnaires were mailed to this abbreviated sample in February 1974. Data collection activities continued to August 1974. Completed questionnaires were obtained for 87.7 percent of the sample—approximately 44,000 persons. The 12.3 percent from whom completed questionnaires were not received include persons who either refused to participate, were deceased, or were persons who returned questionnaires with insufficient information to permit processing. In addition, 10.1 percent of the group moved out of science and engineering fields in 1974 leaving a sample of 40,000 persons in science and engineering in 1974.

Therefore, of the original 1,400,000 scientists and engineers whom the sample represented in 1972, 12.3 percent (172,000) did not respond, and 10.1 percent (148,000) represented those who did not meet the criteria for inclusion as scientists and engineers in 1974. As a result, 1,080,000 scientists and engineers remained in 1974 and it is this group with which this report is concerned.

For each sample case for which a completed questionnaire was obtained, the information from the 1974 survey was matched with 1972 survey data and 1970 census data for the same person. Weights applied to sample cases in the 1972 survey were then used to weight the resultant matched data file up to universe totals. The use of the 1972 survey weights means that no adjustment for nonresponse was made to 1974 survey results.

Respondents[2] to the 1974 National Survey of Scientists and Engineers were classified, again based on criteria of the National Science Foundation, into one of the fields of science and engineering, or the category "not in a field of science and engineering in 1974."

[1] For a description of the selection process, see "Sample Selection Process for the 1974 Survey," p. 20.

[2] The words "respondent" or "nonrespondent," when applied to members of the universe, refer to the number in the universe represented by sample persons who responded or did not respond, respectively, to the 1974 survey.

## The Questionnaire

Each panel member in the 1974 National Survey of Scientists and Engineers was asked to complete by self-enumeration a 4-page questionnaire (reproduced in appendix D). A cover letter was printed on page 1 of the questionnaire, and a set of reference lists (also reproduced in appendix D) was attached to the questionnaire. The reference lists were used by respondents to self-code answers to inquiries on major field of study (question 2, part b5 of the questionnaire), kind of business (question 11), occupation (question 12), and professional identification (question 20).

## Definitions and Explanations

**Fields of science and engineering**—Science or engineering fields are categories established to identify persons who could be classified as engineers or scientists under most definitions. In general, to be classified into one of the fields, a person had to have at least two of the following three characteristics:

(1) Employment in the field; (2) attainment of a specified educational level in an academic discipline related to the field; or (3) self-identification, based upon total education and experience, as being in the field. More detailed information on the criteria for membership in a scientific and technical field is given farther on in the section, "Criteria for Fields of Science or Engineering in 1974."

The fields of science and engineering for which data are presented in this report and the detailed fields they comprise are as follows:

*Physical scientists*
- Chemists
- Physicists and astronomers
- Other physical scientists

*Mathematical scientists*
- Mathematicians
- Statisticians

*Computer specialists*

*Environmental scientists*
- Earth scientists
- Atmospheric scientists
- Oceanographers

*Engineers*

*Life scientists*
- Agricultural scientists
- Biological scientists
- Medical scientists

*Psychologists*

*Social scientists*
Economists
Sociologists and anthropologists
Other social scientists

**Race**—The data on race are based on responses in the 1970 Census of Population. The "other races" category includes all races not included in the specific categories listed.

**Age in 1974**—The reference period for age in 1974 was April 1974. The median age is that age that divides the distribution into two equal parts, one-half being older than the median age and one-half younger. Median ages were derived from an estimation process that distributed the subject populations into 5-year age groups.

**Highest degree held**—Highest degree held in 1974 refers to the highest academic degree awarded or assumed to have been awarded to the respondent in 1973 or earlier. Data on the highest degree held were derived as follows. First, question 2 of the 1974 questionnaire was reviewed to determine the highest degree worked for by the respondent *since 1971*. This degree was accepted as the highest degree received since 1971 if the respondent reported that it had been awarded in 1972 or 1973, or if he failed to indicate when it had been awarded, but did report the completion of at least a certain number of years of postsecondary education in question 1. The required years for each degree are specified in the following tabulation:

| *Degree* | *Minimum years of postsecondary education* |
|---|---|
| No degree | 0 |
| Other | 0 |
| A.A. | 2 |
| R.N. | 3 |
| B.A. | 4 |
| M.A. | 5 |
| LL.B. | 7 |
| M.D. | 8 |
| Ph.D. | 7 |

Second, the highest degree received since 1971 was designated as the highest degree held by the respondent *in 1974* if it was at the same or at a higher academic level than the highest degree reported in the 1972 survey. Otherwise, the highest degree reported in 1972 was designated as the highest degree held in 1974.

The "other degree" classification includes persons whose highest academic degree was one of the following: R.N., L.L.B., M.D., and academic degrees other than those shown.

Except for engineers, the criteria for inclusion in a scientific or engineering field required that a person possess an academic degree at the bachelor's level or higher. Therefore, only engineers and persons "not in a field of science or engineering" can have an "associate degree" or "no degree."

**Major field of study for highest degree held**—The data on major field of study refer to the major subject associated with the highest degree held in 1974 as determined by the method described above. For persons whose highest degree held in 1974 was received after 1971, the data are derived from question 2, part b5 of the 1974 questionnaire. For persons whose highest degree was awarded in 1971 or earlier, the data on major subject are based on the 1972 survey.

## Source of Data Items

| Characteristic | Item number on 1974 questionnaire[1] | Source code[2] on 1974 questionnaire |
|---|---|---|
| Sex | (From the 1972 survey response, if available; otherwise from the 1970 Census response) | |
| Age in 1974 | (from 1970 Census response, if available; otherwise from 1972 survey response) | |
| Field of science or engineering in 1972 | (From the 1972 survey response) | |
| Race[3] | (From the 1970 Census response) | |
| Highest degree held[3] | 1; 2 (parts a, b2, b3, and b4); otherwise from 1972 survey response | 012,013,017-025 |
| Major field of study for highest degree held[3] | 2 (part b5), otherwise from 1972 survey response | 026,027,028 |
| Nonformal training in 1972 | 3 | 029 |
| Nonformal training in 1973 | 3 | 030 |
| Professional identification | Part IV: 20 | 082 |

[1] The 1974 National Survey of Scientists and Engineers questionnaire is reprinted in appendix D.

[2] Source codes refer to sections of the 1974 questionnaire denoted by a three-digit number inside a circle: e.g., State (if USA) = (010).

[3] See appropriate subject under "Definitions and Explanations."

## Criteria for Fields of Science or Engineering in 1974

**(Developed by the National Science Foundation)**

Respondents in the 1974 National Survey of Scientists and Engineers were classified into a specific field of science and engineering in 1974 if they met, in relation to the specific field, any one of the criteria given below. Classification by these criteria proceeded such that all respondents were initially examined by the first criterion; those not placed into a field by the first criterion, were then examined by the second; those not categorized by the second, were examined by the third; and so on, until only those remained who met none of the criteria—these were classified as "not in a field of science or engineering in 1974." The academic degree levels and major fields of study used in these criteria refer to the highest degree held. The coincident and related fields of study and the coincident and related occupations and professions are shown in table A-1. Occupation refers to the most recent job for which occupation was reported.

### THE CRITERIA

A member of a field of science or engineering in 1974 is an individual (1) who had earned a master's degree or higher[3] in a coincident field of study and who regarded himself, based on his to education and experience, as having a coincident profession; or (2) who had earned a Ph.D. in any field of social or natural science,[4] and was employed in a coincident occupation; or (3) who had earned a bachelor's degree or higher in a coincident field of study, and was employed in a coincident occupation; or (4) who had earned a bachelor's degree or higher in any field of study, was employed in a coincident occupation, and regarded himself as having a coincident profession; or (5) whose highest degree[5] was in a coincident field of study[6], and who was employed as a college president, college dean, or manager or administrator of research or development, production or operations[7] or (6) who had earned a bachelor's degree or higher in a coincident field of study,[8] was employed in a related occupation, and regarded himself as having a coincident profession; or (7) who had earned a bachelor's degree in a coincident field of study since 1969 and who regarded himself as having a coincident profession; or (8)

[3] Engineers could meet this requirement with a bachelor's degree or higher.
[4] Codes 501-587 and 593 from list A of appendix D.
[5] At the bachelor's level or higher.
[6] Certain coincident fields of study are common to two fields of science or engineering. Therefore, persons meeting criterion 5 with field of study represented by codes 508 or 526 of list A of appendix were classified exclusively as "biological scientists"; those with codes 565 or 568, were classified exclusively as "other physical scientists"; and those with code 581, were classified exclusively as "economists".
[7] Codes 457-459 of list C of appendix D.
[8] In addition to a coincident field of study, engineers could have earned a bachelor's degree or higher in codes 508, 529, 557, 559-561, 563-568 of list A of appendix D.



## Table A-1.—Coincident and related major fields of study, occupations, and professions, by field of science or engineering in 1974

[Codes are from reference lists A and C of appendix D]

| Field of science or engineering in 1974 | Major field of study | | Occupation and profession | |
|---|---|---|---|---|
| | Coincident | Related | Coincident | Related |
| Computer specialists | 559 | 501-526,532-558,560-568 | 415-417 | 401-413,415-417,419-438 |
| Engineers | 532-550 | 508,529,557,559-561 563-568, | 401-413 | 457-459 |
| Mathematical scientists: | | | | |
| Mathematicians | 557 | 532-550,558-568,576 | 419 | 401-413,415-417,419-438 |
| Statisticians | 558 | 518,532,535-545,548 550,557,559-572,575, 576,586,587 | 420 | 401-413,415-417,419-438 |
| Life scientists: | | | | |
| Agricultural scientists | 501-503,506,512, 514-517,519,523, 524,526, | 504,505,507-511,513, 518,520-522,525,532-568 | 428 | 401-413,415-417,419-433, 438 |
| Biological scientists | 504,505,507-511, 513,518,520-522, 525,526,554 | 501-503,506,512,514-517,519,523,524,532-553,555-568 | 429,431,433 | 401-413,415-417,419-433, 438 |
| Medical scientists | 555,556 | 501,526,532-550, 557-573 | 432 | 401-413,415-417,419-438 |
| Physical scientists: | | | | |
| Chemists | 508,561 | 501-507,509-526,532-560,562-568 | 422,430 | 401-413,415-417,419-433, 438 |
| Physicists and astronomers | 560,564 | 508,509,535-541,543-546,550,557-559,561-563,565-568 | 424 | 401-413,415-417,419-433, 438 |
| Other physical scientists | 565,568 | 501-526,532-564,566,567 | 427 | 401-413,415-417,419-433, 438 |
| Environmental scientists: | | | | |
| Earth scientists | 565,566,568 | 501-526,532-564,567 | 423 | 401-413,415-417,419-433, 438 |
| Atmospheric scientists | 563 | 501-526,532-562,564-568 | 425 | 401-413,415-417,419-433, 438 |
| Oceanographers | 567 | 501-526,532-566,568 | 426 | 401-413,415-417,419-433, 438 |
| Psychologists | 569-572 | 509,551,552,556-558,573,586 | 435 | 401-413,415-417,419-438 |
| Social scientists: | | | | |
| Economists | 575-576,581 | 501,557-559,574, 557-580,582,583,589,595 | 434 | 434-437 |
| Sociologists and anthropologists | 573,586 | 569,572,574,577, 579,587,593 | 436 | 401-413,415-417,419-438 |
| Other social scientists | 574,577,581-584, 587,593 | None | 437 | 434-437 |

Source: Bureau of the Census

who had earned a bachelor's degree or higher in any field of science[9] and was employed as a college president, college dean, or administrator or manager of research or development, production or operations[10] and who regarded himself as having a coincident profession; or (9) whose highest degree[11] was in a related field of study and who was employed in a coincident occupation and who regarded himself professionally to be a college president, dean, or administrator or manager of research or development, production or operations.[12] The field "engineers" also includes any individual who failed to meet any of the above 9 criteria but who had completed a minimum of two years of a program of study leading to a bachelor's degree in engineering or a related field of study before 1968, and was employed as an engineer, and regarded himself professionally to be an engineer or a manager or administrator of research or development, production or operations; or who earned an associate degree before 1968, and was employed as an engineer, and regarded himself professionally to be an engineer or a manager or administrator of research or development, production, or operations.[13]

Some respondents to the 1974 survey reported "operations research analyst"[14] as their occupation or profession. The National Science Foundation determined that certain of the above criteria should classify these persons as either "mathematicians" or "engineers." Such an individual, therefore, is classified by criteria 3 or 7 as a "mathematician" if he, depending upon the criterion specified, was either employed as or regarded himself professionally as an "operations research analyst" and met the educational requirement of the specified criterion as it related to mathematicians. Likewise, the individual was classified by criteria 3, 4, or 7 as an "engineer" if, depending on the criterion specified, his occupation and/or profession was "operations research analyst" instead of "engineer," and he met all the other requirements of the specified criterion as these related to engineers. In addition, an individual is classified as an engineer if he met none of the above criteria, but had earned a bachelor's degree in a field of study other than one coincident to a field of science or engineering, was employed as a college president, dean, manager or administrator of research or development, production or operations,[15] and regarded himself professionally as an "operations research analyst."

[9] For all fields except economists, codes 501-587 and 593 of list A of appendix D for economists, codes 557, 558, 573-587, and 593 of list A of appendix D.
[10] Codes 457-459 of list C of appendix D.
[11] At the bachelor's level or higher.
[12] Codes 457-459 of list C of appendix D.
[13] Codes 458 and 459 of list C of appendix D.
[14] Code 421 of list C of appendix D.
[15] Codes 457-459 of list C of appendix D.

## Weighting and Estimating Procedures

**Estimation procedures**—As mentioned earlier, the estimates for this report were prepared by a ratio estimation procedure, using the weights derived for the 1972 survey. Therefore, no adjustment was made for nonresponse in the 1974 survey. The weighting procedure for the 1972 survey involved first, the preparation of preliminary estimates by weighting the results for each sample person by the reciprocal of the probability of selection. As a second step, these weights were adjusted by applying a factor for each age, sex, and race cell within each of the sample's occupational categories from the 1970 census. Within each of the cells, the factor was computed as the ratio of the 1970 census count to the preliminary estimate. The final weight was the factor multiplied by the original weight of each person. To the extent the correlation between the data being tabulated and the estimated count of persons in the cells are positively correlated, the ratio estimation procedure will improve the reliability of the estimate.

**Reliability of the estimates**—The sample used for this survey is only one of a large number of possible samples that could have been selected using the same sample design, sample selection, and measurement procedures. Estimates derived from these samples would differ from each other. In addition, the estimates are subject to errors of response and of reporting, as occur in all survey work. The standard error of a survey estimate is primarily a measure of the variation among the estimates from all possible samples and is, therefore, a measure of the precision with which an estimate from a particular sample approximates the average result of all possible samples. As calculated for this report, the standard error also partially measures the effect of certain nonsampling errors but does *not* measure any systematic biases in the data. The estimate and its associated standard error may be used to construct a confidence interval, that is, an interval having a prescribed probability that would include the average result of all possible samples. The chances are about two out of three (about 68 percent) that the survey estimate will differ from the average result of all possible samples by less than one standard error (plus or minus). Similarly, the chances are about 19 out of 20 that the difference would be less than twice the standard error and 99 out or 100 that it would be less than 2-½ times the standard error.

A number of approximations and generalizations have been used to produce standard errors, and hence the standard errors presented in the following tables should be regarded as approximations rather than precise measurements of the standard error in question.

There are two standard error tables shown for each group: A table for estimating standard errors of absolute numbers (total number of persons in a group, having a certain characteristic) and a table to obtain the standard errors of percentages.

The standard errors for estimating numbers or percents not shown in either set of tables may be approximated by linear interpolation. For example, of the 55,160 persons in the computer specialist field in 1974, 26.9 percent have the master's degree as the highest degree held in 1974. The standard error of this percent as computed from table A-3b is 1.1 percent. Based on these data, we may conclude that the expected proportion of computer specialists with the master's degree as the highest degree held in 1974 lies within the interval 24.7 percent to 29.1 percent with 95-percent confidence.

The figures in these tables are not directly applicable to standard errors of differences between two sample estimates. The standard error of the estimated difference between two figures may be approximated by the square root of the sum of the squares of the standard error of each estimate. This approximation will yield an exact result when the two characteristics are uncorrelated. If the two characteristics are positively correlated, the approximation will overestimate the standard error of the difference. For a difference between two sample estimates, one of which represents a subclass of the other, the table can be used with the difference considered as the sample estimate.

For example, of the 55,160 computer specialists in 1974, 4.7 percent have the Ph.D. as the highest degree held in 1974. The standard error of this percent as computed from table A-3b is 0.5 percent. The standard error of the difference between the above percentages (i.e., 26.9 - 4.7 = 22.2 percent) is then approximately

$(1.1)^2 + (0.5)^2 = 1.2$ percent

Based on these data, we may conclude with 95 percent confidence that the average estimate of the difference of the percentages derived from all possible samples lies within the interval 19.8 percent to 24.6 percent.

22

# STANDARD ERRORS OF TOTALS AND PERCENTAGES FOR:

## All Scientific and Technical Fields

**Table A-2a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 1,000 | 190 |
| 5,000 | 430 |
| 10,000 | 610 |
| 20,000 | 850 |
| 50,000 | 1,320 |
| 100,000 | 1,830 |
| 150,000 | 2,180 |
| 300,000 | 2,810 |
| 500,000 | 3,120 |
| 800,000 | 2,770 |
| 1,080,000 | 2,650 |

**Table A-2b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 or 99 | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 1,000 | 1.9 | 2.6 | 4.1 | 5.7 | 7.6 | 8.3 | 9.6 |
| 5,000 | 1.3 | 1.2 | 1.8 | 2.5 | 3.4 | 3.7 | 4.2 |
| 10,000 | .8 | .8 | 1.3 | 1.8 | 2.4 | 2.6 | 3.0 |
| 20,000 | .6 | .6 | .9 | 1.2 | 1.7 | 1.8 | 2.1 |
| 50,000 | .4 | .3 | .5 | .8 | 1.0 | 1.1 | 1.3 |
| 100,000 | .19 | .26 | .4 | .5 | .7 | .8 | .9 |
| 150,000 | .15 | .21 | .3 | .4 | .6 | .6 | .7 |
| 300,000 | .11 | .15 | .2 | .3 | .4 | .4 | .5 |
| 500,000 | .08 | .12 | .18 | .25 | .3 | .3 | .4 |
| 800,000 | .06 | .09 | .14 | .20 | .27 | .29 | .3 |
| 1,080,000 | .05 | .08 | .12 | .17 | .23 | .25 | .2 |

## Computer specialists, psychologists, physical scientists, and medical scientists

**Table A-3a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 40 |
| 200 | 90 |
| 500 | 140 |
| 1,000 | 200 |
| 3,000 | 340 |
| 5,000 | 430 |
| 10,000 | 590 |
| 15,000 | 690 |
| 25,000 | 810 |
| 40,000 | 840 |
| 60,000 | 600 |
| 75,000 | 340 |
| 100,000 | 210 |
| 121,000 | 170 |

**Table A-3b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 12.7 | 19.8 | 27.3 | 36.4 | 39.4 | 45.5 |
| 200 | 6.3 | 9.9 | 13.6 | 18.2 | 19.7 | 22.7 |
| 500 | 4.0 | 6.2 | 8.6 | 11.5 | 12.4 | 14.3 |
| 1,000 | 2.8 | 4.4 | 6.1 | 8.1 | 8.8 | 10.1 |
| 3,000 | 1.6 | 2.5 | 3.5 | 4.7 | 5.0 | 5.8 |
| 5,000 | 1.2 | 1.9 | 2.7 | 3.6 | 3.9 | 4.5 |
| 10,000 | .9 | 1.4 | 1.9 | 2.5 | 2.7 | 3.2 |
| 15,000 | .7 | 1.1 | 1.5 | 2.1 | 2.2 | 2.6 |
| 25,000 | .5 | .8 | 1.2 | 1.6 | 1.7 | 2.0 |
| 40,000 | .4 | .7 | .9 | 1.2 | 1.3 | 1.6 |
| 60,000 | .3 | .5 | .7 | 1.0 | 1.1 | 1.3 |
| 75,000 | .3 | .5 | .7 | .9 | 1.0 | 1.1 |
| 100,000 | .2 | .4 | .6 | .8 | .8 | 1.0 |
| 121,000 | .2 | .4 | .5 | .7 | .8 | .9 |

## Chemists

**Table A-4a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 40 |
| 200 | 80 |
| 500 | 130 |
| 1,000 | 190 |
| 3,000 | 320 |
| 5,000 | 420 |
| 10,000 | 570 |
| 15,000 | 680 |
| 25,000 | 810 |
| 40,000 | 900 |
| 60,000 | 840 |
| 87,300 | 600 |

**Table A-4b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 12.1 | 18.8 | 25.9 | 34.6 | 37.4 | 43.2 |
| 200 | 6.0 | 9.4 | 12.9 | 17.3 | 18.7 | 21.6 |
| 500 | 3.8 | 5.9 | 8.2 | 10.9 | 11.8 | 13.6 |
| 1,000 | 2.7 | 4.2 | 5.8 | 7.7 | 8.3 | 9.6 |
| 3,000 | 1.5 | 2.4 | 3.3 | 4.4 | 4.8 | 5.5 |
| 5,000 | 1.2 | 1.8 | 2.5 | 3.4 | 3.7 | 4.3 |
| 10,000 | .8 | 1.3 | 1.8 | 2.4 | 2.6 | 3.0 |
| 15,000 | .6 | 1.0 | 1.4 | 1.9 | 2.1 | 2.4 |
| 25,000 | .5 | .8 | 1.1 | 1.5 | 1.6 | 1.9 |
| 40,000 | .4 | .6 | .9 | 1.2 | 1.3 | 1.5 |
| 60,000 | .3 | .5 | .7 | .9 | 1.0 | 1.2 |
| 87,300 | .2 | .4 | .6 | .8 | .8 | 1.0 |

## Physicists and astronomers

**Table A-5a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 40 |
| 200 | 80 |
| 500 | 130 |
| 1,000 | 190 |
| 1,500 | 210 |
| 2,500 | 290 |
| 5,000 | 390 |
| 10,000 | 490 |
| 15,000 | 500 |
| 20,000 | 450 |
| 27,500 | 370 |

**Table A-5b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 12.1 | 18.9 | 26.0 | 34.7 | 37.6 | 43.4 |
| 200 | 6.0 | 9.4 | 13.0 | 17.3 | 18.8 | 21.7 |
| 500 | 3.8 | 5.9 | 8.2 | 10.9 | 11.8 | 13.7 |
| 1,000 | 2.7 | 4.2 | 5.8 | 7.7 | 8.4 | 9.7 |
| 1,500 | 2.2 | 3.4 | 4.7 | 6.3 | 6.8 | 7.9 |
| 2,500 | 1.7 | 2.6 | 3.6 | 4.9 | 5.3 | 6.1 |
| 5,000 | 1.2 | 1.8 | 2.6 | 3.4 | 3.7 | 4.3 |
| 10,000 | .8 | 1.3 | 1.8 | 2.4 | 2.6 | 3.0 |
| 15,000 | .7 | 1.0 | 1.5 | 2.0 | 2.1 | 2.5 |
| 20,000 | .6 | .9 | 1.3 | 1.7 | 1.8 | 2.1 |
| 27,500 | .5 | .8 | 1.1 | 1.4 | 1.6 | 1.8 |

## Mathematical scientists, mathematicians, and statisticians

**Table A-6a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 30 |
| 200 | 70 |
| 500 | 110 |
| 1,000 | 160 |
| 3,000 | 270 |
| 5,000 | 340 |
| 10,000 | 440 |
| 15,000 | 500 |
| 25,000 | 500 |
| 40,000 | 370 |

**Table A-6b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 10.2 | 15.9 | 21.9 | 29.2 | 31.6 | 36.5 |
| 200 | 5.1 | 7.9 | 10.9 | 14.6 | 15.8 | 18.2 |
| 500 | 3.2 | 5.0 | 6.9 | 9.2 | 10.0 | 11.5 |
| 1,000 | 2.2 | 3.5 | 4.9 | 6.5 | 7.0 | 8.1 |
| 3,000 | 1.3 | 2.0 | 2.8 | 3.7 | 4.0 | 4.7 |
| 5,000 | 1.0 | 1.5 | 2.1 | 2.9 | 3.1 | 3.6 |
| 10,000 | .7 | 1.1 | 1.5 | 2.0 | 2.2 | 2.5 |
| 15,000 | .5 | .9 | 1.2 | 1.6 | 1.8 | 2.1 |
| 25,000 | .4 | .7 | .9 | 1.3 | 1.4 | 1.6 |
| 40,000 | .3 | .5 | .7 | 1.0 | 1.1 | 1.2 |

## Environmental scientists, earth scientists, and biological scientists

**Table A-7a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 40 |
| 200 | 80 |
| 500 | 130 |
| 1,000 | 190 |
| 1,500 | 230 |
| 2,500 | 300 |
| 5,000 | 400 |
| 10,000 | 520 |
| 15,000 | 580 |
| 20,000 | 590 |
| 30,000 | 440 |
| 36,000 | 360 |

**Table A-7b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 12.3 | 19.1 | 26.4 | 35.2 | 38.1 | 44.0 |
| 200 | 6.1 | 9.5 | 13.2 | 17.6 | 19.0 | 22.0 |
| 500 | 3.8 | 6.0 | 8.3 | 11.1 | 12.0 | 13.9 |
| 1,000 | 2.7 | 4.2 | 5.9 | 7.8 | 8.5 | 9.8 |
| 1,500 | 2.2 | 3.5 | 4.8 | 6.4 | 6.9 | 8.0 |
| 2,500 | 1.7 | 2.7 | 3.7 | 4.9 | 5.3 | 6.2 |
| 5,000 | 1.2 | 1.9 | 2.6 | 3.5 | 3.8 | 4.4 |
| 10,000 | .8 | 1.3 | 1.8 | 2.4 | 2.6 | 3.1 |
| 15,000 | .7 | 1.1 | 1.5 | 2.0 | 2.2 | 2.5 |
| 20,000 | .6 | .9 | 1.3 | 1.7 | 1.9 | 2.2 |
| 30,000 | .5 | .7 | 1.0 | 1.4 | 1.5 | 1.7 |
| 36,000 | .4 | .7 | .9 | 1.3 | 1.4 | 1.6 |

## Oceanographers and other physical scientists

**Table A-8a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 30 |
| 200 | 60 |
| 500 | 90 |
| 1,000 | 120 |
| 1,500 | 140 |
| 2,500 | 150 |
| 3,000 | 160 |
| 4,000 | 150 |
| 5,000 | 120 |
| 6,150 | 110 |

**Table A-8b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 8.1 | 12.6 | 17.4 | 23.2 | 25.2 | 29.1 |
| 200 | 4.0 | 6.3 | 8.7 | 11.6 | 12.6 | 14.5 |
| 500 | 2.5 | 4.0 | 5.5 | 7.3 | 7.9 | 9.2 |
| 1,000 | 1.8 | 2.8 | 3.9 | 5.2 | 5.6 | 6.5 |
| 1,500 | 1.4 | 2.3 | 3.1 | 4.2 | 4.6 | 5.3 |
| 2,500 | 1.1 | 1.7 | 2.4 | 3.2 | 3.5 | 4.1 |
| 3,000 | 1.0 | 1.6 | 2.2 | 3.0 | 3.2 | 3.7 |
| 4,000 | .9 | 1.4 | 1.9 | 2.6 | 2.8 | 3.2 |
| 5,000 | .8 | 1.2 | 1.7 | 2.3 | 2.5 | 2.9 |
| 6,150 | .7 | 1.1 | 1.5 | 2.1 | 2.2 | 2.6 |

## Atmospheric scientists

**Table A-9a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 30 |
| 200 | 80 |
| 500 | 115 |
| 1,000 | 150 |
| 1,500 | 160 |
| 2,000 | 150 |
| 2,500 | 140 |
| 3,000 | 100 |
| 3,350 | 80 |

**Table A-9b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 11.0 | 17.2 | 23.7 | 31.6 | 34.2 | 39.5 |
| 200 | 5.5 | 8.6 | 11.8 | 15.8 | 17.1 | 19.7 |
| 500 | 3.5 | 5.4 | 7.5 | 10.0 | 10.8 | 12.5 |
| 1,000 | 2.4 | 3.8 | 5.3 | 7.0 | 7.6 | 8.8 |
| 1,500 | 2.0 | 3.1 | 4.3 | 5.7 | 6.2 | 7.2 |
| 2,000 | 1.7 | 2.7 | 3.7 | 5.0 | 5.4 | 6.2 |
| 2,500 | 1.5 | 2.4 | 3.3 | 4.4 | 4.8 | 5.5 |
| 3,000 | 1.4 | 2.2 | 3.0 | 4.0 | 4.4 | 5.1 |
| 3,350 | 1.3 | 2.1 | 2.8 | 3.8 | 4.1 | 4.8 |

## Engineers

**Table A-10a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 500 | 140 |
| 1,000 | 200 |
| 5,000 | 450 |
| 10,000 | 630 |
| 20,000 | 890 |
| 40,000 | 1,240 |
| 75,000 | 1,650 |
| 150,000 | 2,180 |
| 200,000 | 2,710 |
| 300,000 | 2,630 |
| 400,000 | 2,620 |
| 500,000 | 2,390 |
| 690,000 | 2,100 |

**Table A-10b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 500 | 4.0 | 6.2 | 8.5 | 11.4 | 12.3 | 14.2 |
| 1,000 | 2.8 | 4.4 | 6.0 | 8.0 | 8.7 | 10.1 |
| 5,000 | 1.2 | 1.9 | 2.7 | 3.6 | 3.9 | 4.5 |
| 10,000 | .8 | 1.3 | 1.9 | 2.5 | 2.7 | 3.1 |
| 20,000 | .6 | .9 | 1.3 | 1.8 | 1.9 | 2.2 |
| 40,000 | .4 | .6 | .9 | 1.2 | 1.3 | 1.5 |
| 75,000 | .3 | .5 | .7 | .9 | 1.0 | 1.1 |
| 150,000 | .2 | .3 | .4 | .6 | .7 | .8 |
| 200,000 | .2 | .3 | .4 | .5 | .6 | .7 |
| 300,000 | .1 | .2 | .3 | .4 | .5 | .5 |
| 400,000 | .1 | .2 | .3 | .4 | .4 | .5 |
| 500,000 | .1 | .1 | .2 | .3 | .3 | .4 |
| 690,000 | .1 | .1 | .2 | .3 | .3 | .3 |

## Life scientists and agricultural scientists

**Table A-11a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 40 |
| 200 | 90 |
| 500 | 140 |
| 1,000 | 210 |
| 3,000 | 350 |
| 5,000 | 450 |
| 10,000 | 621 |
| 15,000 | 605 |
| 25,000 | 863 |
| 40,000 | 915 |
| 60,000 | 739 |
| 75,500 | 640 |

**Table A-11b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 13.2 | 20.5 | 28.3 | 37.7 | 40.8 | 47.2 |
| 200 | 6.6 | 10.2 | 14.1 | 16.8 | 20.4 | 23.6 |
| 500 | 4.1 | 6.5 | 8.9 | 9.1 | 12.9 | 14.9 |
| 1,000 | 2.9 | 4.6 | 6.3 | 8.4 | 9.1 | 10.5 |
| 3,000 | 1.7 | 2.6 | 3.6 | 4.8 | 5.2 | 6.0 |
| 5,000 | 1.3 | 2.0 | 2.8 | 3.7 | 4.0 | 4.7 |
| 10,000 | .9 | 1.4 | 2.0 | 2.6 | 2.8 | 3.3 |
| 15,000 | .7 | 1.1 | 1.6 | 2.1 | 2.3 | 2.7 |
| 25,000 | .5 | .9 | 1.2 | 1.6 | 1.8 | 2.1 |
| 40,000 | .4 | .7 | 1.0 | 1.3 | 1.8 | 1.6 |
| 60,000 | .3 | .5 | .8 | 1.0 | 1.1 | 1.3 |
| 75,500 | .3 | .5 | .7 | .9 | 1.0 | 1.2 |

## Social scientists, sociologists, anthropologists, and other social scientists

**Table A-12a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 30 |
| 200 | 100 |
| 500 | 160 |
| 1,000 | 230 |
| 3,000 | 410 |
| 5,000 | 510 |
| 10,000 | 700 |
| 15,000 | 830 |
| 25,000 | 990 |
| 40,000 | 1,080 |
| 60,000 | 970 |
| 82,800 | 710 |

**Table A-12b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 14.9 | 23.1 | 31.9 | 42.5 | 46.0 | 53.2 |
| 200 | 7.4 | 11.5 | 15.9 | 21.2 | 23.0 | 26.6 |
| 500 | 4.7 | 7.3 | 10.0 | 13.4 | 14.5 | 16.8 |
| 1,000 | 3.3 | 5.1 | 7.1 | 9.5 | 10.3 | 11.9 |
| 3,000 | 1.9 | 2.9 | 4.1 | 5.4 | 5.9 | 6.8 |
| 5,000 | 1.4 | 2.3 | 3.1 | 4.2 | 4.6 | 5.3 |
| 10,000 | 1.0 | 1.6 | 2.2 | 3.0 | 3.2 | 3.7 |
| 15,000 | .8 | 1.3 | 1.8 | 2.4 | 2.6 | 3.0 |
| 25,000 | .6 | 1.0 | 1.4 | 1.9 | 2.0 | 2.3 |
| 40,000 | .5 | .8 | 1.1 | 1.5 | 1.6 | 1.8 |
| 60,000 | .4 | .6 | .9 | 1.2 | 1.3 | 1.5 |
| 82,800 | .3 | .5 | .7 | 1.0 | 1.1 | 1.3 |

## Economists

**Table A-13a.—Standard errors of totals**

| Size of estimate | Estimated standard error |
|---|---|
| 50 | 40 |
| 200 | 80 |
| 500 | 130 |
| 1,000 | 190 |
| 2,500 | 270 |
| 4,000 | 330 |
| 6,000 | 380 |
| 8,000 | 410 |
| 10,000 | 420 |
| 13,000 | 400 |
| 16,000 | 330 |
| 19,800 | 240 |

**Table A-13b.—Standard errors of percentages**

| Base of percent | Estimated percent | | | | | |
|---|---|---|---|---|---|---|
| | 2 or 98 | 5 or 95 | 10 or 90 | 20 or 80 | 25 or 75 | 50 |
| 50 | 11.8 | 18.3 | 25.2 | 33.7 | 36.5 | 42.1 |
| 200 | 5.9 | 9.1 | 12.6 | 16.8 | 18.2 | 21.0 |
| 500 | 3.7 | 5.8 | 7.9 | 10.6 | 11.5 | 13.3 |
| 1,000 | 2.6 | 4.1 | 5.6 | 7.5 | 8.1 | 9.4 |
| 2,500 | 1.6 | 2.5 | 3.5 | 4.7 | 5.1 | 5.9 |
| 4,000 | 1.3 | 2.0 | 2.8 | 3.7 | 4.0 | 4.7 |
| 6,000 | 1.0 | 1.6 | 2.3 | 3.0 | 3.3 | 3.8 |
| 8,000 | .9 | 1.4 | 1.9 | 2.6 | 2.8 | 3.3 |
| 10,000 | .8 | 1.2 | 1.7 | 2.3 | 2.5 | 2.9 |
| 13,000 | .7 | 1.1 | 1.5 | 2.0 | 2.2 | 2.6 |
| 16,000 | .6 | 1.0 | 1.4 | 1.8 | 2.0 | 2.3 |
| 19,800 | .5 | .9 | 1.2 | 1.6 | 1.8 | 2.1 |

## Sample Selection Process for the 1974 Survey

The 156,116 sample cases for the 1972 Professional, Technical, and Scientific Manpower Survey were separated into two segments. The "target" segment consisted of 150,358 persons who were recorded by the 1970 Census of Population as being in one of the 40 groups of scientific, engineering, or related occupations in the 1970 experienced civilian labor force. The "residual" segment consisted of 5,758 persons who were recorded by the 1970 census as having four or more years of college and as being in the 1970 experienced civilian labor force in occupations other than the 40 target occupational groups.

The sample selection for the 1974 survey focused exclusively on the "target" segment. From this "target" segment, 115,557 persons responded in the 1972 survey. Based on criteria established by the National Science Foundation, these respondents were classified as "in-scope"; that is, in one of 8 major fields of science or engineering in 1972, or as "out-of-scope"; this is, outside a field of science or engineering in 1972. The in-scope cases, numbering 50,093 persons, became the sample for the 1974 survey.

Table A-14 presents a distribution of the 1972 respondents from the 40 groups of census occupations in the "target" segment according to their field of science or engineering in 1972.

## Table A-14.—Field of science or engineering in 1972, by 1970 Census occupation

| | 1970 census occupation[1] | Total | Computer specialists | Engineers | Field of science or engineering in 1972 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Mathematical specialists | | | Life scientists | | | | Physical scientists | | | |
| | | | | | Total | Mathematicians | Statisticians | Total | Agricultural scientists | Biological scientists | Medical scientists | Total | Chemists | Physicists and astronomers | Other physical scientists |
| 1 | Total target occupations | 115,557 | 3,391 | 25,797 | 2,185 | 1,604 | 581 | 4,891 | 2,025 | 2,139 | 727 | 6,248 | 3,644 | 2,128 | 476 |
| 2 | Operations and computer specialists | 14,820 | 2,809 | 780 | 189 | 163 | 26 | 32 | 9 | 17 | 6 | 61 | 18 | 35 | 8 |
| 3 | Computer programmers | 4,515 | 732 | 101 | 67 | 61 | 6 | 8 | 2 | 5 | 1 | 15 | 3 | 9 | 3 |
| 4 | Computer systems analysts | 4,596 | 1,453 | 185 | 59 | 50 | 9 | 11 | 4 | 5 | 2 | 18 | 4 | 11 | 3 |
| 5 | Computer specialists, n.e.c. | 991 | 215 | 116 | 17 | 16 | 1 | 3 | 1 | 1 | 1 | 7 | 1 | 6 | — |
| 6 | Operations and systems analysts | 4,718 | 409 | 378 | 46 | 36 | 10 | 10 | 2 | 6 | 2 | 21 | 10 | 9 | 2 |
| 7 | Engineers | 39,572 | 202 | 22,036 | 89 | 72 | 17 | 67 | 29 | 31 | 7 | 410 | 270 | 126 | 14 |
| 8 | Aeronautical and astronautical engineers | 4,715 | 23 | 2,985 | 23 | 21 | 2 | 6 | 2 | 3 | 1 | 46 | 12 | 31 | 3 |
| 9 | Chemical engineers | 4,308 | 14 | 3,233 | 5 | 5 | — | 9 | 2 | 6 | 1 | 192 | 173 | 16 | 3 |
| 10 | Civil engineers | 4,872 | 7 | 2,905 | 4 | 3 | 1 | 8 | 6 | 1 | 1 | 2 | 2 | — | — |
| 11 | Electrical and electronic engineers | 5,429 | 68 | 3,301 | 11 | 10 | 1 | 2 | 1 | — | 1 | 36 | 7 | 27 | 2 |
| 12 | Industrial engineers | 4,767 | 23 | 1,634 | 23 | 12 | 11 | 14 | 5 | 8 | 1 | 37 | 27 | 8 | 2 |
| 13 | Mechanical engineers | 4,761 | 13 | 2,824 | 5 | 5 | — | 3 | 1 | 2 | — | 6 | — | 6 | — |
| 14 | Metallurgical and materials engineers | 1,231 | 1 | 824 | — | — | — | 7 | 3 | 3 | 1 | 18 | 14 | 4 | — |
| 15 | Mining and petroleum engineers | 1,193 | — | 803 | — | — | — | 3 | 1 | 1 | 1 | 6 | 3 | 3 | — |
| 16 | Sales engineers | 4,060 | 14 | 1,328 | 1 | 1 | — | 3 | 1 | 2 | — | 12 | 7 | 4 | 1 |
| 17 | Engineers, n.e.c., and engineering teachers | 4,236 | 39 | 2,199 | 17 | 15 | 2 | 12 | 7 | 5 | — | 55 | 25 | 27 | 3 |
| 18 | Mathematical specialists | 4,579 | 155 | 139 | 1,679 | 1,218 | 461 | 22 | 4 | 12 | 6 | 50 | 21 | 25 | 4 |
| 19 | Actuaries and statisticians | 2,052 | 16 | 62 | 405 | 34 | 371 | 13 | 4 | 6 | 3 | 14 | 9 | 3 | 2 |
| 20 | Mathematicians | 2,527 | 139 | 77 | 1,274 | 1,184 | 90 | 9 | — | 6 | 3 | 36 | 12 | 22 | 2 |
| 21 | Life scientists | 6,611 | 4 | 71 | 6 | 1 | 5 | 3,713 | 1,718 | 1,643 | 312 | 291 | 91 | 7 | 193 |
| 22 | Agricultural scientists | 1,358 | — | 33 | 3 | — | 3 | 606 | 517 | 86 | 3 | 43 | 7 | — | 36 |
| 23 | Foresters and conservationists[2] | 1,369 | 1 | 17 | — | — | — | 1,037 | 1,018 | 17 | 2 | 14 | 2 | — | 12 |
| 24 | Biological scientists | 3,884 | 3 | 21 | 3 | 1 | 2 | 2,070 | 183 | 1,580 | 307 | 234 | 82 | 7 | 145 |
| 25 | Physical scientists | 10,560 | 37 | 803 | 37 | 34 | 3 | 203 | 40 | 98 | 65 | 4,634 | 2,707 | 1,753 | 174 |
| 26 | Chemists | 4,883 | 9 | 334 | 7 | 5 | 2 | 138 | 28 | 67 | 43 | 2,692 | 2,641 | 13 | 38 |
| 27 | Physicists | 2,888 | 18 | 323 | 15 | 15 | — | 38 | 2 | 15 | 21 | 1,822 | 37 | 1,709 | 76 |
| 28 | Other physical scientists | 2,789 | 10 | 146 | 15 | 14 | 1 | 27 | 10 | 16 | 1 | 120 | 29 | 31 | 60 |
| 29 | Social scientists | 10,116 | 67 | 217 | 80 | 27 | 33 | 73 | 21 | 24 | 28 | 54 | 29 | 9 | 16 |
| 30 | Economists | 4,564 | 63 | 170 | 44 | 15 | 29 | 30 | 19 | 7 | 4 | 23 | 18 | 3 | 2 |
| 31 | Psychologists | 3,030 | 2 | 5 | 3 | 1 | 2 | 23 | — | 6 | 17 | 7 | 2 | — | 5 |
| 32 | Other social scientists | 2,522 | 2 | 42 | 13 | 11 | 2 | 20 | 2 | 11 | 7 | 24 | 9 | 6 | 9 |
| 33 | Engineering and science technicians | 11,956 | 23 | 586 | 11 | 8 | 3 | 91 | 34 | 41 | 16 | 211 | 188 | 13 | 10 |
| 34 | Agricultural, biological, and chemical technicians, excl. health technicians | 2,105 | 2 | 34 | 2 | 2 | — | 50 | 19 | 23 | 8 | 158 | 150 | 2 | 6 |
| 35 | Draftsmen | 2,434 | — | 126 | — | — | — | 2 | 2 | — | — | 2 | — | — | 2 |
| 36 | Electrical and electronic engineering technicians | 2,825 | 8 | 79 | 2 | 1 | 1 | 2 | — | 1 | 1 | 5 | 4 | 1 | — |
| 37 | Industrial and mechanical engineering technicians, and numerical control tool programmers | 1,327 | 8 | 99 | 5 | 3 | 2 | — | — | — | — | 6 | 5 | 1 | — |
| 38 | Surveyors | 2,010 | — | 73 | 1 | 1 | — | 10 | 9 | 1 | — | 1 | 1 | — | — |
| 39 | Mathematical technicians and engineering and science technicians, n.e.c. | 2,055 | 5 | 95 | 1 | 1 | — | 27 | 4 | 16 | 7 | 39 | 28 | 9 | 2 |
| 40 | Personnel and labor relations workers | 2,506 | 5 | 50 | 7 | 6 | 1 | 14 | 7 | 4 | 3 | 12 | 8 | 3 | 1 |
| 41 | Health specialties teachers | 1,055 | — | 3 | — | — | — | 220 | 5 | 22 | 193 | 19 | 9 | 3 | 7 |
| 42 | Trade, industrial, and technical teachers | 122 | 1 | 1 | — | — | — | 2 | — | — | 2 | — | — | — | — |
| 43 | Miscellaneous teachers | 659 | 1 | 18 | 3 | 3 | — | 6 | 1 | 2 | 3 | 8 | 2 | — | 6 |
| 44 | Teachers, subject not specified | 2,018 | 7 | 125 | 33 | 27 | 6 | 123 | 24 | 78 | 21 | 98 | 47 | 42 | 9 |
| 45 | Technicians, n.e.c. | 1,234 | 3 | 17 | 1 | 1 | — | 5 | 2 | 2 | 1 | 8 | 6 | 2 | — |
| 46 | Research workers, not specified | 1,984 | 14 | 233 | 33 | 18 | 15 | 178 | 55 | 80 | 43 | 259 | 158 | 77 | 24 |
| 47 | School administrators, college[3] | 1,138 | 4 | 28 | 4 | 3 | 1 | 36 | 10 | 20 | 6 | 16 | 9 | 4 | 3 |
| 48 | Managers and administrators, n.e.c.[3] | 6,627 | 59 | 768 | 33 | 23 | 10 | 106 | 66 | 25 | 15 | 117 | 81 | 29 | 7 |

See footnote at end of table.

## Table A-14.—Field of science or engineering in 1972, by 1970 Census occupation—Continued

| | 1970 census occupation[1] | Field of science or engineering in 1972 | | | | | | | | | Not in a field of science or engineering in 1972 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Environmental scientists | | | | Psychologists | Social scientists | | | | |
| | | Total | Atmospheric scientists | Earth scientists | Oceanographers | | Total | Economists | Sociologists and anthropologists | Other social scientists | |
| 1 | Total target occupations | 2,095 | 150 | 1,898 | 47 | 2,488 | 2,998 | 1,216 | 696 | 1,086 | 65,464 |
| 2 | Operations and computer specialists | 19 | 2 | 17 | — | 22 | 106 | 50 | 12 | 44 | 10,802 |
| 3 | Computer programmers | 6 | 1 | 5 | — | 9 | 5 | 4 | — | 1 | 3,572 |
| 4 | Computer systems analysts | 5 | 1 | 4 | — | 6 | 34 | 18 | 4 | 12 | 2,825 |
| 5 | Computer specialists, n.e.c. | 5 | — | 5 | — | — | 4 | 1 | 1 | 2 | 624 |
| 6 | Operations and systems analysts | 3 | — | 3 | — | 7 | 63 | 27 | 7 | 29 | 3,781 |
| 7 | Engineers | 71 | 6 | 65 | — | 21 | 69 | 31 | 8 | 30 | 16,607 |
| 8 | Aeronautical and astronomical engineers | 4 | 1 | 3 | — | 3 | 10 | 3 | — | 7 | 1,615 |
| 9 | Chemical engineers | 4 | 2 | 2 | — | 2 | 3 | 2 | 1 | — | 846 |
| 10 | Civil engineers | 14 | — | 14 | — | 1 | 6 | 2 | — | 4 | 1,925 |
| 11 | Electrical and electronic engineers | 2 | 1 | 1 | — | — | 4 | 2 | — | 2 | 2,005 |
| 12 | Industrial engineers | 4 | 2 | 2 | — | 7 | 27 | 15 | 2 | 10 | 2,998 |
| 13 | Mechanical engineers | 1 | — | 1 | — | 1 | 3 | 1 | 1 | 1 | 1,905 |
| 14 | Metallurgical and materials engineers | 1 | — | 1 | — | 1 | 1 | — | — | 1 | 378 |
| 15 | Mining and petroleum engineers | 33 | — | 33 | — | — | 1 | — | 1 | — | 347 |
| 16 | Sales engineers | 2 | — | 2 | — | 2 | 5 | 2 | 1 | 2 | 2,693 |
| 17 | Engineers, n.e.c., and engineering teachers | 6 | — | 6 | — | 4 | 9 | 4 | 2 | 3 | 1,895 |
| 18 | Mathematical specialists | 8 | — | 8 | — | 25 | 75 | 36 | 10 | 29 | 2,426 |
| 19 | Actuaries and statisticians | 1 | — | 1 | — | 15 | 56 | 27 | 7 | 22 | 1,470 |
| 20 | Mathematicians | 7 | — | 7 | — | 10 | 19 | 9 | 3 | 7 | 956 |
| 21 | Life scientists | 53 | 5 | 44 | 4 | 48 | 46 | 19 | 10 | 17 | 2,379 |
| 22 | Agricultural scientists | 12 | 2 | 10 | — | — | 25 | 16 | 2 | 7 | 636 |
| 23 | Foresters and conservationists[2] | 9 | — | 8 | 1 | — | 3 | 1 | — | 2 | 288 |
| 24 | Biological scientists | 32 | 3 | 26 | 3 | 48 | 18 | 2 | 8 | 8 | 1,455 |
| 25 | Physical scientists | 1,815 | 123 | 1,660 | 32 | 8 | 25 | 5 | 8 | 12 | 2,998 |
| 26 | Chemists | 13 | 1 | 11 | 1 | 2 | 8 | 2 | 4 | 2 | 1,680 |
| 27 | Physicists | 27 | 2 | 23 | 2 | 6 | 8 | 2 | 4 | 2 | 631 |
| 28 | Other physical scientists | 1,775 | 120 | 1,626 | 29 | — | 9 | 1 | — | 8 | 687 |
| 29 | Social scientists | 10 | — | 10 | — | 2,108 | 2,111 | 924 | 541 | 646 | 5,416 |
| 30 | Economists | 3 | — | 3 | — | 10 | 992 | 917 | 5 | 70 | 3,229 |
| 31 | Psychologists | — | — | — | — | 2,082 | 117 | — | 17 | 100 | 791 |
| 32 | Other social scientists | 7 | — | 7 | — | 16 | 1,002 | 7 | 519 | 476 | 1,396 |
| 33 | Engineering and science technicians | 15 | 1 | 14 | — | 5 | 11 | 2 | 5 | 4 | 11,083 |
| 34 | Agricultural, biological, and chemical technicians, excl. health technicians | 3 | — | 3 | — | — | 2 | — | 1 | 1 | 1,854 |
| 35 | Draftsmen | 3 | — | 3 | — | 2 | — | — | — | — | 2,299 |
| 36 | Electrical and electronic engineering technicians | 1 | 1 | — | — | — | 2 | 1 | 1 | — | 1,926 |
| 37 | Industrial and mechanical engineering technicians, and numerical control tool programmers | — | — | — | — | — | 2 | 1 | — | 1 | 1,207 |
| 38 | Surveyors | — | — | — | — | — | 2 | — | 1 | 1 | 1,923 |
| 39 | Mathematical technicians and engineering and science technicians, n.e.c. | 8 | — | 8 | — | 3 | 3 | — | 2 | 1 | 1,874 |
| 40 | Personnel and labor relations workers | 1 | — | 1 | — | 20 | 53 | 9 | 4 | 40 | 2,344 |
| 41 | Health specialties teachers | 1 | — | 1 | — | 28 | 11 | 1 | 2 | 8 | 771 |
| 42 | Trade, industrial, and technical teachers | — | — | — | — | 1 | 1 | — | — | 1 | 116 |
| 43 | Miscellaneous teachers | 13 | 2 | 11 | — | 1 | 49 | 1 | 2 | 46 | 560 |
| 44 | Teachers, subject not specified | 25 | — | 23 | 2 | 61 | 127 | 32 | 46 | 49 | 1,419 |
| 45 | Technicians, n.e.c. | 2 | 1 | 1 | — | 1 | 3 | — | 1 | 2 | 1,194 |
| 46 | Research workers, not specified | 37 | 7 | 21 | 9 | 68 | 111 | 27 | 25 | 59 | 1,051 |
| 47 | School administrators, college[2] | 5 | — | 5 | — | 35 | 53 | 17 | 6 | 30 | 957 |
| 48 | Managers and administrators, n.e.c.[2] | 20 | 3 | 17 | — | 36 | 147 | 62 | 16 | 69 | 5,341 |

[1] For detailed information on the composition of the census occupational categories, see U.S. Bureau of the Census, **Characteristics of Persons in Engineering and Scientific Occupations: 1972**, Technical Paper No. 33, 1974, appendix A (especially list A, page 120) for categories with line numbers 33–48, and appendix E for categories with line numbers 2–32.

[2] Excludes persons with fewer than four years of college.

NOTE: — Represents zero; n.e.c. Not elsewhere classified.

SOURCE: Bureau of the Census.

## Analysis of Response

Table A-15 presents response rates of various components of the sample for the 1974 National Survey of Scientists and Engineers. The characteristics presented here are based on the 1970 census or on the 1974 survey. Since the percentages in the table are based on a complete count of the sample cases, no reference to the standard error tables is necessary.

Men were more likely than women to respond in the 1974 survey. About 88 percent of the men in the survey panel responded, compared with about 85 percent of the women.

Response rates increased steadily by age from a rate of nearly 76 percent for panel members under 25-years old to almost 92 percent for the age group 55 to 59-years old. After peaking for the 55 to 59 years of age group, however, the response rate made slight declines in the groups above 60, dropping to around 90 percent for persons 65 years and over. Since nonrespondents include deceased persons, this slight decrease in rates is expected. Overall, except for the two youngest age groups, over 85 percent of each age category responded in the 1974 survey; even the youngest groups, however, had rates above 75 percent.

There were only slight differences in response rates for 1974 among the various fields of science or engineering in 1972. The highest response rate, 91 percent, was that for environmental scientists, one of the oldest groups on the average. The lowest response rate was approximately 86 percent for computer specialists, social scientists, and psychologists.

**Table A-15.—Percent distribution—analysis of response in the 1974 National Survey of Scientists and Engineers, by field of science or engineering in 1972, age in 1974, and sex**

| Sex, age in 1974, and field of science or engineering in 1972 | Total number | Percent distribution | | |
|---|---|---|---|---|
| | | Total | Respondents | Nonrespondents |
| Total | 50,093 | 100.0 | 88.2 | 11.8 |
| SEX | | | | |
| Male | 46,877 | 100.0 | 88.3 | 11.7 |
| Female | 3,216 | 100.0 | 85.4 | 14.6 |
| AGE IN 1974 | | | | |
| Under 25 years | 9 | 100.0 | 75.8 | 24.2 |
| 25 to 29 years | 4,730 | 100.0 | 83.9 | 16.1 |
| 30 to 34 years | 9,174 | 100.0 | 85.6 | 14.4 |
| 35 to 39 years | 8,312 | 100.0 | 87.1 | 12.9 |
| 40 to 44 years | 7,797 | 100.0 | 88.8 | 11.2 |
| 45 to 49 years | 7,057 | 100.0 | 89.7 | 10.3 |
| 50 to 54 years | 5,646 | 100.0 | 91.3 | 8.7 |
| 55 to 59 years | 3,495 | 100.0 | 91.6 | 8.4 |
| 60 to 64 years | 2,161 | 100.0 | 91.1 | 8.9 |
| 65 years and over | 1,622 | 100.0 | 89.5 | 10.5 |
| FIELD OF SCIENCE OR ENGINEERING IN 1972 | | | | |
| Computer specialists | 3,391 | 100.0 | 85.6 | 14.4 |
| Engineers | 25,797 | 100.0 | 88.1 | 11.9 |
| Mathematical scientists | 2,185 | 100.0 | 88.4 | 11.6 |
| Life scientists | 4,891 | 100.0 | 89.7 | 10.3 |
| Physical scientists | 6,248 | 100.0 | 89.9 | 10.1 |
| Environmental scientists | 2,095 | 100.0 | 90.7 | 9.3 |
| Psychologists | 2,488 | 100.0 | 86.1 | 13.9 |
| Social scientists | 2,998 | 100.0 | 85.5 | 14.5 |

SOURCE: Bureau of the Census.

# APPENDIX B

## Detailed Statistical Tables


**SCIENTISTS AND ENGINEERS BY FIELD**

B-1. By sex and age: 1974 ..... 26
B-2. By race and age: 1974 ..... 28
B-3. By sex and race: 1974 ..... 32
B-4. By sex and highest degree: 1974 ..... 33
B-5. By highest degree and age: 1974 ..... 35
B-6. By highest degree and race: 1974 ..... 39
B-7. By highest degree and nonformal training in 1972: 1974 ..... 42
B-8. By highest degree and nonformal training in 1973: 1974 ..... 47
B-9. By highest degree and professional identification: 1974 ..... 52
B-10. By major subject of study for highest degree held and highest degree: 1974 ..... 56

**WOMEN SCIENTISTS AND ENGINEERS BY FIELD**

B-11. By race and age: 1974 ..... 63
B-12. By highest degree and age: 1974 ..... 67
B-13. By highest degree and race: 1974 ..... 71

**Table B-1.—Number of scientists and engineers by field, sex, and age: 1974**

| Field and sex | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total, all fields | 1,079,698 | 2,137 | 106,274 | 182,024 | 175,473 | 162,207 | 155,926 | 125,831 | 78,795 | 51,134 | 26,963 | 12,934 |
| Male | 1,025,741 | 2,064 | 92,692 | 170,567 | 168,549 | 156,452 | 151,291 | 121,353 | 75,992 | 48,708 | 25,659 | 12,414 |
| Female | 53,957 | 73 | 13,582 | 11,457 | 6,924 | 5,755 | 4,635 | 4,478 | 2,803 | 2,426 | 1,304 | 520 |
| Physical scientists | 121,011 | 304 | 11,003 | 22,276 | 21,525 | 16,745 | 15,738 | 13,770 | 9,087 | 5,919 | 3,166 | 1,478 |
| Male | 111,936 | 293 | 8,808 | 20,297 | 20,071 | 15,792 | 14,857 | 12,977 | 8,783 | 5,582 | 3,030 | 1,446 |
| Female | 9,075 | 11 | 2,195 | 1,979 | 1,454 | 953 | 881 | 793 | 304 | 337 | 136 | 32 |
| Chemists | 87,334 | 193 | 8,254 | 14,731 | 14,317 | 11,619 | 11,755 | 10,877 | 7,044 | 4,941 | 2,572 | 1,031 |
| Male | 79,231 | 193 | 6,166 | 12,906 | 13,119 | 10,803 | 10,966 | 10,172 | 6,789 | 4,666 | 2,436 | 1,015 |
| Female | 8,103 | (1) | 2,088 | 1,825 | 1,198 | 816 | 789 | 705 | 255 | 275 | 136 | 16 |
| Physicists/ astronomers | 27,519 | 100 | 2,286 | 6,431 | 5,928 | 4,139 | 2,963 | 2,370 | 1,543 | 882 | 483 | 394 |
| Male | 26,784 | 100 | 2,241 | 6,344 | 5,739 | 4,002 | 2,901 | 2,282 | 1,494 | 820 | 483 | 378 |
| Female | 735 | (1) | 45 | 87 | 189 | 137 | 62 | 88 | 49 | 62 | (1) | 16 |
| Other physical scientists | 6,158 | 11 | 463 | 1,114 | 1,280 | 987 | 1,020 | 523 | 500 | 96 | 111 | 53 |
| Male | 5,921 | (1) | 401 | 1,047 | 1,213 | 987 | 990 | 523 | 500 | 96 | 111 | 53 |
| Female | 237 | 11 | 62 | 67 | 67 | (1) | 30 | (1) | (1) | (1) | (1) | (1) |
| Mathematical scientists | 27,833 | 86 | 3,603 | 7,098 | 4,907 | 3,822 | 3,259 | 1,694 | 1,465 | 1,100 | 553 | 246 |
| Male | 23,795 | 70 | 2,520 | 6,135 | 4,509 | 3,549 | 2,857 | 1,425 | 1,183 | 883 | 444 | 220 |
| Female | 4,038 | 16 | 1,083 | 963 | 398 | 273 | 402 | 269 | 282 | 217 | 109 | 26 |
| Mathe-maticians | 20,076 | 33 | 2,696 | 5,438 | 3,591 | 2,684 | 2,624 | 1,039 | 891 | 558 | 383 | 139 |
| Male | 17,412 | 33 | 1,902 | 4,842 | 3,241 | 2,508 | 2,270 | 932 | 776 | 451 | 318 | 139 |
| Female | 2,664 | (1) | 794 | 596 | 350 | 176 | 354 | 107 | 115 | 107 | 65 | (1) |
| Statisticians | 7,757 | 53 | 907 | 1,660 | 1,316 | 1,138 | 635 | 655 | 574 | 542 | 170 | 107 |
| Male | 6,383 | 37 | 618 | 1,293 | 1,268 | 1,041 | 587 | 493 | 407 | 432 | 126 | 81 |
| Female | 1,374 | 16 | 289 | 367 | 48 | 97 | 48 | 162 | 167 | 110 | 44 | 26 |
| Computer specialists | 55,186 | 15 | 9,629 | 18,439 | 10,844 | 8,370 | 4,484 | 1,979 | 932 | 254 | 164 | 76 |
| Male | 48,439 | 15 | 6,924 | 16,123 | 10,150 | 8,010 | 4,161 | 1,761 | 932 | 184 | 143 | 36 |
| Female | 6,747 | (1) | 2,705 | 2,316 | 694 | 360 | 323 | 218 | (1) | 70 | 21 | 40 |
| Environmental scientists | 29,466 | 15 | 2,007 | 3,888 | 4,273 | 5,656 | 4,873 | 4,225 | 2,201 | 1,606 | 523 | 199 |
| Male | 28,572 | 15 | 1,799 | 3,799 | 4,243 | 5,491 | 4,841 | 3,961 | 2,168 | 1,533 | 523 | 199 |
| Female | 894 | (1) | 208 | 89 | 30 | 165 | 32 | 264 | 33 | 73 | (1) | (1) |
| Earth scientists | 24,589 | 15 | 1,671 | 3,187 | 3,320 | 4,935 | 4,420 | 3,312 | 1,700 | 1,464 | 379 | 186 |
| Male | 23,772 | 15 | 1,475 | 3,098 | 3,290 | 4,770 | 4,388 | 3,113 | 1,667 | 1,391 | 379 | 186 |
| Female | 817 | (1) | 196 | 89 | 30 | 165 | 32 | 199 | 33 | 73 | (1) | (1) |
| Ocean-ographers | 1,563 | (1) | 186 | 331 | 489 | 106 | 157 | 111 | 40 | 35 | 108 | (1) |
| Male | 1,563 | (1) | 186 | 331 | 489 | 106 | 157 | 111 | 40 | 35 | 108 | (1) |
| Female | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Atmospheric scientists | 3,314 | (1) | 150 | 370 | 464 | 615 | 296 | 802 | 461 | 107 | 36 | 13 |
| Male | 3,237 | (1) | 138 | 370 | 464 | 615 | 296 | 737 | 461 | 107 | 36 | 13 |
| Female | 77 | (1) | 12 | (1) | (1) | (1) | (1) | 65 | (1) | (1) | (1) | (1) |
| Engineers | 687,911 | 1,485 | 62,413 | 99,861 | 108,039 | 104,852 | 107,929 | 87,427 | 53,826 | 34,872 | 18,584 | 8,623 |
| Male | 684,552 | 1,485 | 61,314 | 99,176 | 107,761 | 104,545 | 107,661 | 87,188 | 53,698 | 34,677 | 18,424 | 8,623 |
| Female | 3,359 | (1) | 1,099 | 685 | 278 | 307 | 268 | 239 | 128 | 195 | 160 | (1) |
| Life scientists | 75,462 | 167 | 7,189 | 13,670 | 13,278 | 11,957 | 9,866 | 7,316 | 5,857 | 3,504 | 1,687 | 971 |
| Male | 65,483 | 137 | 5,347 | 11,524 | 11,740 | 10,539 | 9,217 | 6,445 | 5,198 | 2,944 | 1,477 | 915 |
| Female | 9,979 | 30 | 1,842 | 2,146 | 1,538 | 1,418 | 649 | 871 | 659 | 560 | 210 | 56 |
| Biological scientists | 35,935 | 98 | 4,346 | 7,703 | 6,131 | 5,147 | 4,644 | 2,815 | 2,535 | 1,465 | 698 | 353 |
| Male | 29,601 | 68 | 2,931 | 6,088 | 5,355 | 4,419 | 4,205 | 2,277 | 2,059 | 1,283 | 590 | 326 |
| Female | 6,334 | 30 | 1,415 | 1,615 | 776 | 728 | 439 | 538 | 476 | 182 | 108 | 27 |
| Agricultural scientists | 28,790 | 69 | 2,064 | 4,075 | 5,214 | 4,947 | 4,130 | 3,236 | 2,310 | 1,388 | 833 | 524 |
| Male | 28,450 | 69 | 2,005 | 4,060 | 5,038 | 4,947 | 4,130 | 3,219 | 2,310 | 1,388 | 773 | 511 |
| Female | 340 | (1) | 59 | 15 | 176 | (1) | (1) | 17 | (1) | (1) | 60 | 13 |

Table B-1—Con.

| Field and sex | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medical scientists | 10,737 | (1) | 779 | 1,892 | 1,933 | 1,863 | 1,092 | 1,265 | 1,012 | 651 | 156 | 94 |
| Male | 7,432 | (1) | 411 | 1,376 | 1,347 | 1,173 | 882 | 949 | 829 | 273 | 114 | 78 |
| Female | 3,305 | (1) | 368 | 516 | 586 | 690 | 210 | 316 | 183 | 378 | 42 | 16 |
| Psychologists | 34,889 | 35 | 4,698 | 7,164 | 5,287 | 4,909 | 4,801 | 3,694 | 1,951 | 1,186 | 730 | 434 |
| Male | 25,105 | 19 | 3,128 | 5,494 | 3,956 | 3,609 | 3,664 | 2,815 | 1,245 | 637 | 327 | 211 |
| Female | 9,784 | 16 | 1,570 | 1,670 | 1,331 | 1,300 | 1,137 | 879 | 706 | 549 | 403 | 223 |
| Social scientists | 47,940 | 30 | 5,732 | 9,628 | 7,320 | 5,896 | 4,976 | 5,726 | 3,476 | 2,693 | 1,556 | 907 |
| Male | 37,859 | 30 | 2,852 | 8,019 | 6,119 | 4,917 | 4,033 | 4,781 | 2,785 | 2,268 | 1,291 | 764 |
| Female | 10,081 | (1) | 2,880 | 1,609 | 1,201 | 979 | 943 | 945 | 691 | 425 | 265 | 143 |
| Economists | 19,754 | 15 | 1,800 | 3,552 | 2,840 | 2,596 | 2,006 | 2,719 | 1,369 | 1,479 | 841 | 537 |
| Male | 17,854 | 15 | 1,455 | 3,035 | 2,696 | 2,386 | 1,888 | 2,497 | 1,233 | 1,413 | 699 | 537 |
| Female | 1,900 | (1) | 345 | 517 | 144 | 210 | 118 | 222 | 136 | 66 | 142 | (1) |
| Sociologists/ anthropologists | 11,158 | (1) | 1,495 | 2,706 | 1,844 | 1,202 | 1,158 | 1,413 | 648 | 528 | 81 | 83 |
| Male | 8,039 | (1) | 637 | 2,162 | 1,374 | 877 | 813 | 1,170 | 486 | 368 | 69 | 83 |
| Female | 3,119 | (1) | 858 | 544 | 470 | 325 | 345 | 243 | 162 | 160 | 12 | (1) |
| Other social scientists | 17,028 | 15 | 2,437 | 3,370 | 2,636 | 2,098 | 1,812 | 1,594 | 1,459 | 686 | 634 | 287 |
| Male | 11,966 | 15 | 760 | 2,822 | 2,049 | 1,654 | 1,332 | 1,114 | 1,066 | 487 | 523 | 144 |
| Female | 5,062 | (1) | 1,677 | 548 | 587 | 444 | 480 | 480 | 393 | 199 | 111 | 143 |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

**Table B-2.—Number of scientists and engineers by field, race, and age: 1974**

| Field and race | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total, all fields | 1,079,698 | 2,137 | 106,274 | 182,024 | 175,473 | 162,207 | 155,926 | 125,831 | 78,795 | 51,134 | 26,963 | 12,934 |
| White/ Caucasian ... | 1,039,010 | 2,119 | 103,120 | 173,175 | 166,491 | 154,214 | 150,630 | 122,607 | 77,276 | 50,245 | 26,372 | 12,761 |
| Black/Negro . | 11,102 | (1) | 833 | 2,024 | 2,073 | 2,092 | 1,629 | 1,219 | 528 | 418 | 247 | 39 |
| American Indian ..... | 903 | (1) | 35 | 201 | 237 | 178 | 176 | 14 | (1) | 26 | (1) | 36 |
| Chinese, Japanese, Korean ..... | 23,497 | 18 | 1,515 | 5,090 | 5,232 | 5,120 | 3,056 | 1,961 | 916 | 277 | 287 | 25 |
| Other races .. | 5,186 | (1) | 771 | 1,534 | 1,440 | 603 | 435 | 30 | 75 | 168 | 57 | 73 |
| Physical scientists..... | 121,011 | 304 | 11,003 | 22,276 | 21,525 | 16,746 | 15,738 | 13,770 | 9,087 | 5,919 | 3,166 | 1,478 |
| White/ Caucasian ... | 113,860 | 304 | 10,602 | 20,903 | 19,544 | 14,776 | 15,199 | 13,416 | 8,719 | 5,801 | 3,118 | 1,478 |
| Black/Negro . | 2,206 | (1) | 103 | 472 | 500 | 643 | 141 | 97 | 214 | 16 | 20 | (1) |
| American Indian ..... | 240 | (1) | (1) | (1) | 168 | 72 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 3,905 | (1) | 134 | 607 | 1,107 | 1,169 | 374 | 257 | 127 | 102 | 28 | (1) |
| Other races... | 800 | (1) | 164 | 294 | 206 | 85 | 24 | (1) | 27 | (1) | (1) | (1) |
| Chemists ..... | 87,334 | 193 | 8,254 | 14,731 | 14,317 | 11,619 | 11,755 | 10,877 | 7,044 | 4,941 | 2,572 | 1,031 |
| White/ Caucasian ... | 81,858 | 193 | 7,920 | 13,579 | 12,864 | 10,153 | 11,298 | 10,605 | 6,836 | 4,855 | 2,524 | 1,031 |
| Black/Negro . | 1,853 | (1) | 52 | 456 | 470 | 595 | 125 | 81 | 54 | (1) | 20 | (1) |
| American Indian ..... | 240 | (1) | (1) | (1) | 168 | 72 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 2,649 | (1) | 118 | 418 | 643 | 730 | 308 | 191 | 127 | 86 | 28 | (1) |
| Other races .. | 734 | (1) | 164 | 278 | 172 | 69 | 24 | (1) | 27 | (1) | (1) | (1) |
| Physicists/ astronomers .. | 27,519 | 100 | 2,286 | 6,431 | 5,928 | 4,139 | 2,963 | 2,370 | 1,543 | 882 | 483 | 394 |
| White/ Caucasian ... | 26,118 | 100 | 2,254 | 6,227 | 5,430 | 3,668 | 2,897 | 2,288 | 1,527 | 850 | 483 | 394 |
| Black/Negro . | 128 | (1) | 16 | 16 | (1) | 32 | 16 | 16 | 16 | 16 | (1) | (1) |
| American Indian ..... | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 1,207 | (1) | 16 | 172 | 464 | 423 | 50 | 66 | (1) | 16 | (1) | (1) |
| Other races .. | 66 | (1) | (1) | 16 | 34 | 16 | (1) | (1) | (1) | (1) | (1) | (1) |
| Other physical scientists ..... | 6,158 | 11 | 463 | 1,114 | 1,280 | 987 | 1,020 | 523 | 500 | 96 | 111 | 53 |
| White/ Caucasian ... | 5,884 | 11 | 428 | 1,097 | 1,250 | 955 | 1,004 | 523 | 356 | 96 | 111 | 53 |
| Black/Negro . | 225 | (1) | 35 | (1) | 30 | 16 | (1) | (1) | 144 | (1) | (1) | (1) |
| American Indian ..... | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 49 | (1) | (1) | 17 | (1) | 16 | 16 | (1) | (1) | (1) | (1) | (1) |
| Other races .. | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematical scientists..... | 27,833 | 86 | 3,603 | 7,098 | 4,907 | 3,822 | 3,259 | 1,694 | 1,465 | 1,100 | 553 | 246 |
| White/ Caucasian.... | 25,902 | 86 | 3,384 | 6,704 | 4,558 | 3,290 | 3,133 | 1,475 | 1,428 | 1,063 | 535 | 246 |
| Black/Negro . | 1,034 | (1) | 196 | 289 | 109 | 148 | 108 | 128 | 37 | 19 | (1) | (1) |
| American Indian ..... | 37 | (1) | (1) | 19 | (1) | 18 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 733 | (1) | 23 | 68 | 221 | 294 | 18 | 91 | (1) | 18 | (1) | (1) |
| Other races .. | 127 | (1) | (1) | 18 | 19 | 72 | (1) | (1) | (1) | (1) | 18 | (1) |

Table B-2—Con.

| Field and race | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 64-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mathematicians | 20,076 | 33 | 2,696 | 5,438 | 3,591 | 2,684 | 2,624 | 1,039 | 891 | 558 | 383 | 139 |
| White/Caucasian | 18,833 | 33 | 2,533 | 5,138 | 3,371 | 2,428 | 2,536 | 878 | 873 | 521 | 383 | 139 |
| Black/Negro | 787 | (1) | 140 | 251 | 90 | 92 | 70 | 107 | 18 | 19 | (1) | (1) |
| American Indian | 18 | (1) | (1) | (1) | (1) | 18 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 401 | (1) | 23 | 49 | 111 | 128 | 18 | 54 | (1) | 18 | (1) | (1) |
| Other races | 37 | (1) | (1) | (1) | 19 | 18 | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 7,757 | 53 | 907 | 1,660 | 1,316 | 1,138 | 635 | 655 | 574 | 542 | 170 | 107 |
| White/Caucasian | 7,069 | 53 | 851 | 1,566 | 1,187 | 862 | 597 | 597 | 555 | 542 | 152 | 107 |
| Black/Negro | 247 | (1) | 56 | 38 | 19 | 56 | 38 | 21 | 19 | (1) | (1) | (1) |
| American Indian | 19 | (1) | (1) | 19 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 332 | (1) | (1) | 19 | 110 | 166 | (1) | 37 | (1) | (1) | (1) | (1) |
| Other races | 90 | (1) | (1) | 18 | (1) | 54 | (1) | (1) | (1) | (1) | 18 | (1) |
| Computer specialists | 55,186 | 15 | 9,629 | 18,439 | 10,844 | 8,370 | 4,484 | 1,979 | 932 | 254 | 164 | 76 |
| White/Caucasian | 53,274 | 15 | 9,447 | 17,975 | 10,471 | 7,937 | 4,294 | 1,825 | 886 | 254 | 94 | 76 |
| Black/Negro | 842 | (1) | 102 | 139 | 151 | 205 | 54 | 99 | 22 | (1) | 70 | (1) |
| American Indian | 50 | (1) | (1) | (1) | (1) | (1) | 50 | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 708 | (1) | 44 | 265 | 79 | 206 | 35 | 55 | 24 | (1) | (1) | (1) |
| Other races | 312 | (1) | 36 | 60 | 143 | 22 | 51 | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 29,466 | 15 | 2,007 | 3,888 | 4,273 | 5,656 | 4,873 | 4,225 | 2,201 | 1,606 | 523 | 199 |
| White/Caucasian | 28,913 | 15 | 1,972 | 3,875 | 4,203 | 5,412 | 4,848 | 4,182 | 2,189 | 1,567 | 451 | 199 |
| Black/Negro | 47 | (1) | 35 | (1) | (1) | (1) | (1) | (1) | (1) | 12 | (1) | (1) |
| American Indian | 70 | (1) | (1) | 13 | (1) | 57 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 409 | (1) | (1) | (1) | 56 | 187 | 12 | 43 | 12 | 27 | 72 | (1) |
| Other Races | 27 | (1) | (1) | (1) | 14 | (1) | 13 | (1) | (1) | (1) | (1) | (1) |
| Earth scientists | 24,589 | 15 | 1,671 | 3,187 | 3,320 | 4,935 | 4,420 | 3,312 | 1,700 | 1,464 | 379 | 186 |
| White/Caucasian | 24,201 | 15 | 1,636 | 3,174 | 3,295 | 4,691 | 4,407 | 3,281 | 1,700 | 1,437 | 379 | 186 |
| Black/Negro | 35 | (1) | 35 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian | 70 | (1) | (1) | 13 | (1) | 57 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 256 | (1) | (1) | (1) | 11 | 187 | (1) | 31 | (1) | 27 | (1) | (1) |
| Other races | 27 | (1) | (1) | (1) | 14 | (1) | 13 | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | 1,563 | (1) | 186 | 331 | 489 | 106 | 157 | 111 | 40 | 35 | 108 | (1) |
| White/Caucasian | 1,474 | (1) | 186 | 331 | 472 | 106 | 157 | 111 | 40 | 35 | 36 | (1) |
| Black/Negro | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 89 | (1) | (1) | (1) | 17 | (1) | (1) | (1) | (1) | (1) | 72 | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |





See footnote at end of table.

Table B-2—Con.

| Field and race | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atmospheric scientists | 3,314 | (1) | 150 | 370 | 464 | 615 | 296 | 802 | 461 | 107 | 36 | 13 |
| White/ Caucasian | 3,238 | (1) | 150 | 370 | 436 | 615 | 284 | 790 | 449 | 95 | 36 | 13 |
| Black/Negro | 12 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | 12 | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 64 | (1) | (1) | (1) | 28 | (1) | 12 | 12 | 12 | (1) | (1) | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineers | 687,911 | 1,485 | 62,413 | 99,861 | 108,039 | 104,852 | 107,929 | 87,427 | 53,826 | 34,872 | 18,584 | 8,623 |
| White/ Caucasian | 664,721 | 1,467 | 60,354 | 94,176 | 103,183 | 101,226 | 104,323 | 85,590 | 53,096 | 34,347 | 18,445 | 8,514 |
| Black/Negro | 4,492 | (1) | 328 | 889 | 861 | 542 | 947 | 513 | 170 | 242 | (1) | (1) |
| American Indian | 336 | (1) | 15 | 152 | (1) | 31 | 89 | (1) | (1) | 13 | (1) | 36 |
| Chinese, Japanese, Korean | 15,003 | 18 | 1,159 | 3,636 | 3,129 | 2,720 | 2,289 | 1,324 | 526 | 102 | 100 | (1) |
| Other races | 3,359 | (1) | 557 | 1,008 | 866 | 333 | 281 | (1) | 34 | 168 | 39 | 73 |
| Life scientists | 75,462 | 167 | 7,189 | 13,670 | 13,278 | 11,957 | 9,866 | 7,316 | 5,857 | 3,504 | 1,687 | 971 |
| White/ Caucasian | 72,059 | 167 | 6,992 | 13,147 | 12,375 | 11,276 | 9,327 | 7,034 | 5,720 | 3,376 | 1,687 | 958 |
| Black/Negro | 1,173 | (1) | 28 | 96 | 252 | 257 | 295 | 145 | 13 | 87 | (1) | (1) |
| American Indian | 108 | (1) | (1) | 17 | 51 | (1) | 13 | 14 | (1) | 13 | (1) | (1) |
| Chinese, Japanese, Korean | 1,768 | (1) | 155 | 363 | 455 | 351 | 184 | 109 | 110 | 28 | (1) | 13 |
| Other races | 354 | (1) | 14 | 47 | 145 | 73 | 47 | 14 | 14 | (1) | (1) | (1) |
| Biological scientists | 35,935 | 98 | 4,346 | 7,703 | 6,131 | 5,147 | 4,644 | 2,815 | 2,535 | 1,465 | 698 | 353 |
| White/ Caucasian | 33,643 | 98 | 4,176 | 7,346 | 5,443 | 4,788 | 4,224 | 2,714 | 2,439 | 1,364 | 698 | 353 |
| Black/Negro | 846 | (1) | 28 | 79 | 226 | 134 | 232 | 47 | 13 | 87 | (1) | (1) |
| American Indian | 65 | (1) | (1) | (1) | 51 | (1) | (1) | 14 | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 1,181 | (1) | 142 | 260 | 294 | 193 | 155 | 40 | 83 | 14 | (1) | (1) |
| Other races | 200 | (1) | (1) | 18 | 117 | 32 | 33 | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 28,790 | 69 | 2,064 | 4,075 | 5,214 | 4,947 | 4,130 | 3,236 | 2,310 | 1,388 | 833 | 524 |
| White/ Caucasian | 28,312 | 69 | 2,051 | 4,012 | 5,054 | 4,903 | 4,070 | 3,138 | 2,283 | 1,375 | 833 | 524 |
| Black/Negro | 117 | (1) | (1) | (1) | 13 | (1) | 34 | 70 | (1) | (1) | (1) | (1) |
| American Indian | 43 | (1) | (1) | 17 | (1) | (1) | 13 | (1) | (1) | 13 | (1) | (1) |
| Chinese, Japanese, Korean | 305 | (1) | 13 | 46 | 147 | 31 | 13 | 28 | 27 | (1) | (1) | (1) |
| Other races | 13 | (1) | (1) | (1) | (1) | 13 | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 10,737 | (1) | 779 | 1,892 | 1,933 | 1,863 | 1,092 | 1,265 | 1,012 | 651 | 156 | 94 |
| White/ Caucasian | 10,104 | (1) | 765 | 1,789 | 1,878 | 1,585 | 1,033 | 1,182 | 998 | 637 | 156 | 81 |
| Black/Negro | 210 | (1) | (1) | 17 | 13 | 123 | 29 | 28 | (1) | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 282 | (1) | (1) | 57 | 14 | 127 | 16 | 41 | (1) | 14 | (1) | 13 |
| Other Races | 141 | (1) | 14 | 29 | 28 | 28 | 14 | 14 | 14 | (1) | (1) | (1) |

**Table B-2—Con.**

| Field and race | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychologists .. | 34,889 | 35 | 4,698 | 7,164 | 5,287 | 4,909 | 4,801 | 3,694 | 1,951 | 1,186 | 730 | 434 |
| White/ Caucasian ... | 34,052 | 35 | 4,668 | 7,054 | 5,125 | 4,679 | 4,698 | 3,554 | 1,935 | 1,155 | 730 | 419 |
| Black/Negro . | 636 | [1] | 30 | 30 | 94 | 212 | 68 | 140 | 16 | 31 | [1] | 15 |
| American Indian ..... | 18 | [1] | [1] | [1] | 18 | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 97 | [1] | [1] | 66 | 15 | [1] | 16 | [1] | [1] | [1] | [1] | [1] |
| Other races .. | 86 | [1] | [1] | 14 | 35 | 18 | 19 | [1] | [1] | [1] | [1] | [1] |
| Social scientists | 47,940 | 30 | 5,732 | 9,628 | 7,320 | 5,896 | 4,976 | 5,726 | 3,476 | 2,693 | 1,556 | 907 |
| White/ Caucasian ... | 46,229 | 30 | 5,701 | 9,341 | 7,032 | 5,618 | 4,808 | 5,531 | 3,303 | 2,682 | 1,312 | 871 |
| Black/Negro . | 672 | [1] | 11 | 109 | 106 | 85 | 16 | 97 | 56 | 11 | 157 | 24 |
| American Indian ..... | 44 | [1] | 20 | [1] | [1] | [1] | 24 | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 874 | [1] | [1] | 85 | 170 | 193 | 128 | 82 | 117 | [1] | 87 | 12 |
| Other races .. | 121 | [1] | [1] | 93 | 12 | [1] | [1] | 16 | [1] | [1] | [1] | [1] |
| Economists ... | 19,754 | 15 | 1,800 | 3,552 | 2,840 | 2,596 | 2,006 | 2,719 | 1,369 | 1,479 | 841 | 537 |
| White/ Caucasian ... | 18,823 | 15 | 1,780 | 3,363 | 2,737 | 2,394 | 1,884 | 2,661 | 1,230 | 1,479 | 767 | 513 |
| Black/Negro . | 237 | [1] | [1] | 38 | 42 | 72 | [1] | 39 | 22 | [1] | [1] | 24 |
| American Indian ..... | 44 | [1] | 20 | [1] | [1] | [1] | 24 | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 557 | [1] | [1] | 58 | 61 | 130 | 98 | 19 | 117 | [1] | 74 | [1] |
| Other races .. | 93 | [1] | [1] | 93 | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Sociologists/ anthropologists | 11,158 | [1] | 1,495 | 2,706 | 1,844 | 1,202 | 1,158 | 1,413 | 648 | 528 | 81 | 83 |
| White/ Caucasian ... | 10,845 | [1] | 1,484 | 2,679 | 1,699 | 1,202 | 1,142 | 1,368 | 614 | 517 | 69 | 71 |
| Black/Negro . | 179 | [1] | 11 | 11 | 39 | [1] | 16 | 45 | 34 | 11 | 12 | [1] |
| American Indian ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 122 | [1] | [1] | 16 | 94 | [1] | [1] | [1] | [1] | [1] | [1] | 12 |
| Other races .. | 12 | [1] | [1] | [1] | 12 | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other social scientists ..... | 17,028 | 15 | 2,437 | 3,370 | 2,636 | 2,098 | 1,812 | 1,594 | 1,459 | 686 | 634 | 287 |
| White/ Caucasian ... | 16,561 | 15 | 2,437 | 3,299 | 2,596 | 2,022 | 1,782 | 1,502 | 1,459 | 686 | 476 | 287 |
| Black/Negro . | 256 | [1] | [1] | 60 | 25 | 13 | [1] | 13 | [1] | [1] | 145 | [1] |
| American Indian ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 195 | [1] | [1] | 11 | 15 | 63 | 30 | 63 | [1] | [1] | 13 | [1] |
| Other races .. | 16 | [1] | [1] | [1] | [1] | [1] | [1] | 16 | [1] | [1] | [1] | [1] |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

**Table B-3.—Number of scientists and engineers by field, sex, and race: 1974**

| Field and sex | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Total, all fields | 1,079,698 | 1,039,010 | 11,102 | 903 | 23,497 | 5,186 |
| Male | 1,025,741 | 988,973 | 9,388 | 858 | 22,075 | 4,447 |
| Female | 53,957 | 50,037 | 1,714 | 45 | 1,422 | 739 |
| Physical scientists | 121,011 | 113,860 | 2,206 | 240 | 3,905 | 800 |
| Male | 111,936 | 106,040 | 1,924 | 240 | 3,357 | 375 |
| Female | 9,075 | 7,820 | 282 | [1] | 548 | 425 |
| Chemists | 87,334 | 81,858 | 1,853 | 240 | 2,649 | 734 |
| Male | 79,231 | 74,906 | 1,654 | 240 | 2,122 | 309 |
| Female | 8,103 | 6,952 | 199 | [1] | 527 | 425 |
| Physicists/astronomers | 27,519 | 26,118 | 128 | [1] | 1,207 | 66 |
| Male | 26,784 | 25,436 | 96 | [1] | 1,186 | 66 |
| Female | 735 | 682 | 32 | [1] | 21 | [1] |
| Other physical scientists | 6,158 | 5,884 | 225 | [1] | 49 | [1] |
| Male | 5,921 | 5,698 | 174 | [1] | 49 | [1] |
| Female | 237 | 186 | 51 | [1] | [1] | [1] |
| Mathematical scientists | 27,833 | 25,902 | 1,034 | 37 | 733 | 127 |
| Male | 23,795 | 22,326 | 664 | 19 | 677 | 109 |
| Female | 4,038 | 3,576 | 370 | 18 | 56 | 18 |
| Mathematicians | 20,076 | 18,833 | 787 | 18 | 401 | 37 |
| Male | 17,412 | 16,459 | 533 | [1] | 383 | 37 |
| Female | 2,664 | 2,374 | 254 | 18 | 18 | [1] |
| Statisticians | 7,757 | 7,069 | 247 | 19 | 332 | 90 |
| Male | 6,383 | 5,867 | 131 | 19 | 294 | 72 |
| Female | 1,374 | 1,202 | 116 | [1] | 38 | 18 |
| Computer specialists | 55,186 | 53,274 | 842 | 50 | 708 | 312 |
| Male | 48,439 | 46,845 | 644 | 50 | 588 | 312 |
| Female | 6,747 | 6,429 | 198 | [1] | 120 | [1] |
| Environmental scientists | 29,466 | 28,913 | 47 | 70 | 409 | 27 |
| Male | 28,572 | 28,139 | 47 | 57 | 302 | 27 |
| Female | 894 | 774 | [1] | 13 | 107 | [1] |
| Earth scientists | 24,589 | 24,201 | 35 | 70 | 256 | 27 |
| Male | 23,772 | 23,504 | 35 | 57 | 149 | 27 |
| Female | 817 | 697 | [1] | 13 | 107 | [1] |
| Oceanographers | 1,563 | 1,474 | [1] | [1] | 89 | [1] |
| Male | 1,563 | 1,474 | [1] | [1] | 89 | [1] |
| Female | [1] | [1] | [1] | [1] | [1] | [1] |

| Field and sex | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Atmospheric scientists | 3,314 | 3,238 | 12 | [1] | 64 | [1] |
| Male | 3,237 | 3,161 | 12 | [1] | 64 | [1] |
| Female | 77 | 77 | [1] | [1] | [1] | [1] |
| Engineers | 687,911 | 664,721 | 4,492 | 336 | 15,003 | 3,359 |
| Male | 684,552 | 661,694 | 4,436 | 336 | 14,834 | 3,253 |
| Female | 3,359 | 3,027 | 57 | [1] | 169 | 106 |
| Life scientists | 75,462 | 72,059 | 1,173 | 108 | 1,768 | 354 |
| Male | 65,483 | 62,933 | 824 | 94 | 1,435 | 197 |
| Female | 9,979 | 9,126 | 349 | 14 | 333 | 157 |
| Biological scientists | 35,935 | 33,643 | 846 | 65 | 1,181 | 200 |
| Male | 29,601 | 27,860 | 645 | 51 | 932 | 113 |
| Female | 6,334 | 5,783 | 201 | 14 | 249 | 87 |
| Agricultural scientists | 28,790 | 28,312 | 117 | 43 | 305 | 13 |
| Male | 28,450 | 27,972 | 117 | 43 | 305 | 13 |
| Female | 340 | 340 | [1] | [1] | [1] | [1] |
| Medical scientists | 10,737 | 10,104 | 210 | [1] | 282 | 141 |
| Male | 7,432 | 7,101 | 62 | [1] | 198 | 71 |
| Female | 3,305 | 3,003 | 148 | [1] | 84 | 70 |
| Psychologists | 34,889 | 34,052 | 636 | 18 | 97 | 86 |
| Male | 25,105 | 24,644 | 322 | 18 | 68 | 53 |
| Female | 9,784 | 9,408 | 314 | [1] | 29 | 33 |
| Social scientists | 47,940 | 46,229 | 672 | 44 | 874 | 121 |
| Male | 37,859 | 36,352 | 528 | 44 | 814 | 121 |
| Female | 10,081 | 9,877 | 144 | [1] | 60 | [1] |
| Economists | 19,754 | 18,823 | 237 | 44 | 557 | 93 |
| Male | 17,854 | 16,989 | 193 | 44 | 535 | 93 |
| Female | 1,900 | 1,834 | 44 | [1] | 22 | [1] |
| Sociologists/ anthropologists | 11,153 | 10,845 | 179 | [1] | 122 | 12 |
| Male | 8,039 | 7,771 | 145 | [1] | 111 | 12 |
| Female | 3,119 | 3,074 | 34 | [1] | 11 | [1] |
| Other social scientists | 17,028 | 16,561 | 256 | [1] | 195 | 16 |
| Male | 11,966 | 11,592 | 190 | [1] | 168 | 16 |
| Female | 5,062 | 4,969 | 66 | [1] | 27 | [1] |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

**Table B-4.—Number of scientists and engineers by field, sex, and highest degree: 1974**

| Field and sex | Total | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other | No degree |
|---|---|---|---|---|---|---|---|---|
| Total, all fields | 1,079,698 | 180,870 | 3,248 | 242,289 | 620,396 | 12,539 | 101 | 20,255 |
| Male | 1,025,741 | 167,481 | 2,963 | 223,076 | 599,341 | 12,524 | 101 | 20,255 |
| Female | 53,957 | 13,389 | 285 | 19,213 | 21,055 | 15 | (1) | (1) |
| Physical scientists | 121,011 | 54,665 | 175 | 22,349 | 43,822 | (1) | (1) | (1) |
| Male | 111,936 | 52,122 | 175 | 20,233 | 39,406 | (1) | (1) | (1) |
| Female | 9,075 | 2,543 | (1) | 2,116 | 4,416 | (1) | (1) | (1) |
| Chemists | 87,334 | 35,897 | 175 | 14,743 | 36,519 | (1) | (1) | (1) |
| Male | 79,231 | 33,843 | 175 | 12,935 | 32,278 | (1) | (1) | (1) |
| Female | 8,103 | 2,054 | (1) | 1,808 | 4,241 | (1) | (1) | (1) |
| Physicists/astronomers | 27,519 | 16,874 | (1) | 5,860 | 4,785 | (1) | (1) | (1) |
| Male | 26,784 | 16,400 | (1) | 5,663 | 4,721 | (1) | (1) | (1) |
| Female | 735 | 474 | (1) | 197 | 64 | (1) | (1) | (1) |
| Other physical scientists | 6,158 | 1,894 | (1) | 1,746 | 2,518 | (1) | (1) | (1) |
| Male | 5,921 | 1,879 | (1) | 1,635 | 2,407 | (1) | (1) | (1) |
| Female | 237 | 15 | (1) | 111 | 111 | (1) | (1) | (1) |
| Mathematical scientists | 27,833 | 10,022 | 147 | 9,328 | 8,336 | (1) | (1) | (1) |
| Male | 23,795 | 9,490 | 147 | 7,674 | 6,484 | (1) | (1) | (1) |
| Female | 4,038 | 532 | (1) | 1,654 | 1,852 | (1) | (1) | (1) |
| Mathematicians | 20,076 | 7,708 | 77 | 6,992 | 5,299 | (1) | (1) | (1) |
| Male | 17,412 | 7,336 | 77 | 5,740 | 4,259 | (1) | (1) | (1) |
| Female | 2,664 | 372 | (1) | 1,252 | 1,040 | (1) | (1) | (1) |
| Statisticians | 7,757 | 2,314 | 70 | 2,336 | 3,037 | (1) | (1) | (1) |
| Male | 6,383 | 2,154 | 70 | 1,934 | 2,225 | (1) | (1) | (1) |
| Female | 1,374 | 160 | (1) | 402 | 812 | (1) | (1) | (1) |
| Computer specialists | 55,186 | 2,604 | 153 | 14,815 | 37,614 | (1) | (1) | (1) |
| Male | 48,439 | 2,438 | 133 | 13,378 | 32,490 | (1) | (1) | (1) |
| Female | 6,747 | 166 | 20 | 1,437 | 5,124 | (1) | (1) | (1) |
| Environmental scientists | 29,466 | 8,054 | 62 | 8,443 | 12,907 | (1) | (1) | (1) |
| Male | 28,572 | 7,824 | 62 | 7,883 | 12,803 | (1) | (1) | (1) |
| Female | 894 | 230 | (1) | 560 | 104 | (1) | (1) | (1) |
| Earth scientists | 24,589 | 6,253 | 62 | 6,927 | 11,347 | (1) | (1) | (1) |
| Male | 23,772 | 6,088 | 62 | 6,379 | 11,243 | (1) | (1) | (1) |
| Female | 817 | 165 | (1) | 548 | 104 | (1) | (1) | (1) |
| Oceanographers | 1,563 | 957 | (1) | 449 | 157 | (1) | (1) | (1) |
| Male | 1,563 | 957 | (1) | 449 | 157 | (1) | (1) | (1) |
| Female | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Atmospheric scientists | 3,314 | 844 | (1) | 1,067 | 1,403 | (1) | (1) | (1) |
| Male | 3,237 | 779 | (1) | 1,055 | 1,403 | (1) | (1) | (1) |
| Female | 77 | 65 | (1) | 12 | (1) | (1) | (1) | (1) |
| Engineers | 687,911 | 31,879 | 1,002 | 145,290 | 476,845 | 12,539 | 101 | 20,255 |
| Male | 684,552 | 31,853 | 1,002 | 144,056 | 474,761 | 12,524 | 101 | 20,255 |
| Female | 3,359 | 26 | (1) | 1,234 | 2,084 | 15 | (1) | (1) |
| Life scientists | 75,462 | 31,765 | 1,416 | 16,789 | 25,492 | (1) | (1) | (1) |
| Male | 65,483 | 28,731 | 1,224 | 13,195 | 22,333 | (1) | (1) | (1) |
| Female | 9,979 | 3,034 | 192 | 3,594 | 3,159 | (1) | (1) | (1) |
| Biological scientists | 35,935 | 19,981 | 153 | 9,187 | 6,614 | (1) | (1) | (1) |
| Male | 29,601 | 17,663 | 139 | 6,786 | 5,013 | (1) | (1) | (1) |
| Female | 6,334 | 2,318 | 14 | 2,401 | 1,601 | (1) | (1) | (1) |
| Agricultural scientists | 28,790 | 6,519 | 25 | 5,618 | 16,628 | (1) | (1) | (1) |
| Male | 28,450 | 6,452 | 25 | 5,434 | 16,539 | (1) | (1) | (1) |
| Female | 340 | 67 | (1) | 184 | 89 | (1) | (1) | (1) |
| Medical scientists | 10,737 | 5,265 | 1,238 | 1,984 | 2,250 | (1) | (1) | (1) |
| Male | 7,432 | 4,616 | 1,060 | 975 | 781 | (1) | (1) | (1) |
| Female | 3,305 | 649 | 178 | 1,009 | 1,469 | (1) | (1) | (1) |
| Psychologists | 34,889 | 20,404 | 53 | 11,034 | 3,398 | (1) | (1) | (1) |
| Male | 25,105 | 16,263 | 40 | 6,417 | 2,385 | (1) | (1) | (1) |
| Female | 9,784 | 4,141 | 13 | 4,617 | 1,013 | (1) | (1) | (1) |
| Social scientists | 47,940 | 21,477 | 240 | 14,241 | 11,982 | (1) | (1) | (1) |
| Male | 37,859 | 18,760 | 180 | 10,240 | 8,679 | (1) | (1) | (1) |
| Female | 10,081 | 2,717 | 60 | 4,001 | 3,303 | (1) | (1) | (1) |

See footnote at end of table.

**Table B-4—Con.**

| Field and sex | Total | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other | No degree |
|---|---|---|---|---|---|---|---|---|
| Economists | 19,754 | 8,792 | 181 | 5,119 | 5,662 | (1) | (1) | (1) |
| Male | 17,854 | 8,263 | 135 | 4,560 | 4,896 | (1) | (1) | (1) |
| Female | 1,900 | 529 | 46 | 559 | 766 | (1) | (1) | (1) |
| Sociologists/anthropologists | 11,158 | 6,470 | 14 | 2,937 | 1,737 | (1) | (1) | (1) |
| Male | 8,039 | 5,255 | (1) | 1,682 | 1,102 | (1) | (1) | (1) |
| Female | 3,119 | 1,215 | 14 | 1,255 | 635 | (1) | (1) | (1) |
| Other social scientists | 17,028 | 6,215 | 45 | 6,185 | 4,583 | (1) | (1) | (1) |
| Male | 11,966 | 5,242 | 45 | 3,998 | 2,681 | (1) | (1) | (1) |
| Female | 5,062 | 973 | (1) | 2,187 | 1,902 | (1) | (1) | (1) |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

## Table B-5.—Number of scientists and engineers by field, highest degree, and age: 1974

| Field and highest degree | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total, all fields | 1,079,698 | 2,137 | 106,274 | 182,024 | 175,473 | 162,207 | 155,926 | 125,831 | 78,795 | 51,134 | 26,963 | 12,934 |
| Doctorate | 180,870 | 141 | 9,076 | 37,428 | 37,047 | 29,798 | 22,638 | 17,755 | 12,131 | 7,690 | 4,673 | 2,493 |
| Professional/ medical | 3,248 | (1) | 70 | 275 | 313 | 551 | 474 | 643 | 351 | 372 | 122 | 77 |
| Master's | 242,289 | 380 | 28,687 | 52,875 | 42,891 | 33,595 | 30,133 | 22,865 | 14,881 | 8,852 | 4,644 | 2,486 |
| Bachelor's | 620,396 | 1,446 | 66,015 | 87,446 | 90,098 | 92,202 | 97,148 | 80,026 | 48,834 | 32,436 | 16,959 | 7,784 |
| Associate | 12,539 | 130 | 1,049 | 2,267 | 1,846 | 3,073 | 1,731 | 1,165 | 917 | 350 | (1) | 11 |
| Other | 101 | (1) | (1) | 13 | 12 | (1) | 39 | 37 | (1) | (1) | (1) | (1) |
| No degree | 20,255 | 40 | 1,377 | 1,720 | 3,266 | 2,988 | 3,763 | 3,340 | 1,681 | 1,432 | 565 | 83 |
| Physical scientists | 121,011 | 304 | 11,003 | 22,276 | 21,525 | 16,745 | 15,738 | 13,770 | 9,087 | 5,919 | 3,166 | 1,478 |
| Doctorate | 54,665 | 53 | 2,839 | 11,358 | 11,150 | 8,415 | 6,658 | 5,552 | 3,712 | 2,503 | 1,634 | 791 |
| Professional/ medical | 175 | (1) | (1) | (1) | (1) | (1) | 28 | 24 | 100 | 23 | (1) | (1) |
| Master's | 22,349 | 103 | 2,510 | 3,715 | 4,327 | 2,757 | 2,643 | 2,772 | 1,825 | 1,027 | 427 | 243 |
| Bachelor's | 43,822 | 148 | 5,654 | 7,203 | 6,048 | 5,573 | 6,409 | 5,422 | 3,450 | 2,366 | 1,105 | 444 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chemists | 87,334 | 193 | 8,254 | 14,731 | 14,317 | 11,619 | 11,755 | 10,877 | 7,044 | 4,941 | 2,572 | 1,031 |
| Doctorate | 35,897 | 53 | 2,181 | 6,644 | 6,878 | 5,212 | 4,578 | 3,934 | 2,966 | 1,886 | 1,154 | 412 |
| Professional/ medical | 175 | (1) | (1) | (1) | (1) | (1) | 28 | 24 | 100 | 23 | (1) | (1) |
| Master's | 14,743 | 103 | 1,338 | 2,271 | 2,480 | 1,896 | 1,839 | 2,080 | 1,365 | 801 | 368 | 202 |
| Bachelor's | 36,519 | 37 | 4,735 | 5,816 | 4,959 | 4,511 | 5,310 | 4,839 | 2,613 | 2,232 | 1,050 | 417 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Physicists/ Astronomers | 27,519 | 100 | 2,286 | 6,431 | 5,928 | 4,139 | 2,963 | 2,370 | 1,543 | 882 | 483 | 394 |
| Doctorate | 16,874 | (1) | 523 | 4,431 | 3,777 | 2,853 | 1,835 | 1,424 | 720 | 594 | 391 | 326 |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 5,860 | (1) | 1,020 | 1,141 | 1,260 | 555 | 572 | 608 | 403 | 201 | 59 | 41 |
| Bachelor's | 4,785 | 100 | 743 | 859 | 891 | 731 | 556 | 338 | 420 | 87 | 33 | 27 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other physical scientists | 6,158 | 11 | 463 | 1,114 | 1,280 | 987 | 1,020 | 523 | 500 | 96 | 111 | 53 |
| Doctorate | 1,894 | (1) | 135 | 283 | 495 | 350 | 245 | 194 | 28 | 24 | 89 | 53 |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,746 | (1) | 152 | 303 | 587 | 306 | 232 | 84 | 57 | 25 | (1) | (1) |
| Bachelor's | 2,518 | 11 | 176 | 528 | 198 | 331 | 543 | 245 | 417 | 47 | 22 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematical scientists | 27,833 | 86 | 3,603 | 7,098 | 4,907 | 3,822 | 3,259 | 1,694 | 1,465 | 1,100 | 553 | 246 |
| Doctorate | 10,022 | (1) | 499 | 2,847 | 2,143 | 1,606 | 1,109 | 731 | 378 | 461 | 147 | 101 |
| Professional/ medical | 147 | (1) | 12 | 58 | 52 | (1) | 12 | (1) | (1) | (1) | (1) | 13 |
| Master's | 9,328 | (1) | 1,606 | 2,379 | 1,466 | 1,145 | 1,056 | 473 | 528 | 294 | 283 | 98 |
| Bachelor's | 8,336 | 86 | 1,486 | 1,814 | 1,246 | 1,071 | 1,082 | 490 | 559 | 345 | 123 | 34 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

Table B-5—Con.

| Field and highest degree | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mathematicians | 20,076 | 33 | 2,696 | 5,436 | 3,591 | 2,684 | 2,624 | 1,039 | 891 | 558 | 383 | 139 |
| Doctorate | 7,708 | (1) | 376 | 2,379 | 1,564 | 1,089 | 859 | 496 | 340 | 407 | 122 | 76 |
| Professional/ medical | 77 | (1) | (1) | (1) | 52 | (1) | 12 | (1) | (1) | (1) | (1) | 13 |
| Master's | 6,992 | (1) | 1,251 | 1,841 | 1,132 | 957 | 825 | 314 | 306 | 121 | 208 | 37 |
| Bachelor's | 5,299 | 33 | 1,069 | 1,218 | 843 | 638 | 928 | 229 | 245 | 30 | 53 | 13 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 7,757 | 53 | 907 | 1,660 | 1,316 | 1,138 | 635 | 655 | 574 | 542 | 170 | 107 |
| Doctorate | 2,314 | (1) | 123 | 468 | 579 | 517 | 250 | 235 | 38 | 54 | 25 | 25 |
| Professional/ medical | 70 | (1) | 12 | 58 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 2,336 | (1) | 355 | 538 | 334 | 188 | 231 | 159 | 222 | 173 | 75 | 61 |
| Bachelor's | 3,037 | 53 | 417 | 596 | 403 | 433 | 154 | 261 | 314 | 315 | 70 | 21 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Computer specialists | 55,186 | 15 | 9,629 | 18,439 | 10,844 | 8,370 | 4,484 | 1,979 | 932 | 254 | 164 | 76 |
| Doctorate | 2,604 | (1) | 271 | 936 | 497 | 508 | 322 | 57 | (1) | 13 | (1) | (1) |
| Professional/ medical | 153 | (1) | (1) | 51 | 18 | 64 | 20 | (1) | (1) | (1) | (1) | (1) |
| Master's | 14,815 | (1) | 2,569 | 5,019 | 3,471 | 1,702 | 926 | 553 | 304 | 83 | 112 | 76 |
| Bachelor's | 37,614 | 15 | 6,789 | 12,433 | 6,858 | 6,096 | 3,216 | 1,369 | 628 | 158 | 52 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 29,466 | 15 | 2,007 | 3,888 | 4,273 | 5,656 | 4,873 | 4,225 | 2,201 | 1,606 | 523 | 199 |
| Doctorate | 8,054 | 15 | 264 | 1,170 | 1,792 | 1,846 | 926 | 872 | 548 | 333 | 251 | 37 |
| Professional/ medical | 62 | (1) | (1) | 13 | (1) | 24 | 12 | (1) | (1) | 13 | (1) | (1) |
| Master's | 8,443 | (1) | 663 | 1,537 | 1,227 | 1,646 | 1,265 | 1,107 | 487 | 312 | 105 | 94 |
| Bachelor's | 12,907 | (1) | 1,060 | 1,168 | 1,254 | 2,140 | 2,670 | 2,246 | 1,166 | 948 | 167 | 68 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth scientists | 24,589 | 15 | 1,671 | 3,187 | 3,320 | 4,935 | 4,420 | 3,312 | 1,700 | 1,464 | 379 | 186 |
| Doctorate | 6,253 | 15 | 133 | 947 | 1,207 | 1,525 | 840 | 608 | 490 | 310 | 154 | 24 |
| Professional/ medical | 62 | (1) | (1) | 13 | (1) | 24 | 12 | (1) | (1) | 13 | (1) | (1) |
| Master's | 6,927 | (1) | 564 | 1,208 | 1,000 | 1,494 | 1,067 | 800 | 318 | 288 | 94 | 94 |
| Bachelor's | 11,347 | (1) | 974 | 1,019 | 1,113 | 1,892 | 2,501 | 1,904 | 892 | 853 | 131 | 68 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | 1,563 | (1) | 186 | 331 | 489 | 108 | 157 | 111 | 40 | 35 | 108 | (1) |
| Doctorate | 957 | (1) | 131 | 149 | 370 | 80 | 33 | 75 | 22 | (1) | 97 | (1) |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 449 | (1) | 30 | 170 | 56 | 13 | 100 | 36 | 9 | 24 | 11 | (1) |
| Bachelor's | 157 | (1) | 25 | 12 | 63 | 13 | 24 | (1) | 9 | 11 | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

**Table B-5—Con.**

| Field and highest degree | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atmospheric scientists | 3,314 | (1) | 150 | 370 | 464 | 615 | 296 | 802 | 461 | 107 | 36 | 13 |
| Doctorate | 844 | (1) | (1) | 74 | 215 | 241 | 53 | 189 | 36 | 23 | (1) | 13 |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,067 | (1) | 69 | 159 | 171 | 139 | 98 | 271 | 160 | (1) | (1) | (1) |
| Bachelor's | 1,403 | (1) | 81 | 137 | 78 | 235 | 145 | 342 | 265 | 84 | 36 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineers | 687,911 | 1,485 | 62,413 | 99,861 | 108,039 | 104,852 | 107,929 | 87,427 | 53,826 | 34,872 | 18,584 | 8,623 |
| Doctorate | 31,879 | (1) | 1,378 | 7,222 | 8,387 | 5,464 | 3,410 | 2,445 | 1,879 | 872 | 505 | 317 |
| Professional/ medical | 1,002 | (1) | 41 | 49 | 97 | 113 | 164 | 231 | 74 | 144 | 37 | 52 |
| Master's | 145,290 | 262 | 14,594 | 30,811 | 26,322 | 21,024 | 19,726 | 14,232 | 8,864 | 5,296 | 2,655 | 1,504 |
| Bachelor's | 476,845 | 1,053 | 43,974 | 57,779 | 68,109 | 72,190 | 79,096 | 65,977 | 40,411 | 26,778 | 14,822 | 6,656 |
| Associate | 12,539 | 130 | 1,049 | 2,267 | 1,846 | 3,073 | 1,731 | 1,165 | 917 | 350 | (1) | 11 |
| Other | 101 | (1) | (1) | 13 | 12 | (1) | 39 | 37 | (1) | (1) | (1) | (1) |
| No degree | 20,255 | 40 | 1,377 | 1,720 | 3,266 | 2,988 | 3,763 | 3,340 | 1,681 | 1,432 | 565 | 83 |
| Life scientists | 75,462 | 167 | 7,189 | 13,670 | 13,278 | 11,957 | 9,866 | 7,316 | 5,857 | 3,504 | 1,687 | 971 |
| Doctorate | 31,765 | 58 | 1,372 | 5,758 | 5,765 | 5,548 | 4,568 | 3,193 | 2,825 | 1,332 | 886 | 460 |
| Professional/ medical | 1,416 | (1) | (1) | 62 | 115 | 350 | 190 | 354 | 149 | 131 | 53 | 12 |
| Master's | 16,789 | (1) | 2,403 | 3,630 | 2,821 | 2,284 | 1,839 | 1,297 | 1,021 | 946 | 381 | 167 |
| Bachelor's | 25,492 | 109 | 3,414 | 4,220 | 4,577 | 3,775 | 3,269 | 2,472 | 1,862 | 1,095 | 367 | 332 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Biological scientists | 35,935 | 98 | 4,346 | 7,703 | 6,131 | 5,147 | 4,644 | 2,815 | 2,535 | 1,465 | 698 | 353 |
| Doctorate | 19,981 | (1) | 866 | 3,931 | 3,819 | 3,319 | 2,968 | 1,761 | 1,651 | 800 | 565 | 301 |
| Professional/ medical | 153 | (1) | (1) | 14 | (1) | 52 | 35 | 40 | (1) | (1) | 12 | (1) |
| Master's | 9,187 | (1) | 1,706 | 2,519 | 1,489 | 1,197 | 849 | 419 | 332 | 529 | 108 | 39 |
| Bachelor's | 6,614 | 98 | 1,774 | 1,239 | 823 | 579 | 792 | 595 | 552 | 136 | 13 | 13 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 28,790 | 69 | 2,064 | 4,075 | 5,214 | 4,947 | 4,130 | 3,236 | 2,310 | 1,388 | 833 | 524 |
| Doctorate | 6,519 | 58 | 353 | 561 | 1,134 | 1,285 | 934 | 914 | 647 | 308 | 232 | 93 |
| Professional/ medical | 25 | (1) | (1) | (1) | (1) | 13 | (1) | 12 | (1) | (1) | (1) | (1) |
| Master's | 5,618 | (1) | 557 | 929 | 891 | 725 | 790 | 703 | 408 | 244 | 259 | 112 |
| Bachelor's | 16,628 | 11 | 1,154 | 2,585 | 3,189 | 2,924 | 2,406 | 1,607 | 1,255 | 836 | 342 | 319 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 10,737 | (1) | 779 | 1,892 | 1,933 | 1,863 | 1,092 | 1,265 | 1,012 | 651 | 156 | 94 |
| Doctorate | 5,265 | (1) | 153 | 1,266 | 812 | 944 | 666 | 518 | 527 | 224 | 89 | 66 |
| Professional/ medical | 1,238 | (1) | (1) | 48 | 115 | 285 | 155 | 302 | 149 | 131 | 41 | 12 |
| Master's | 1,984 | (1) | 140 | 182 | 441 | 362 | 200 | 175 | 281 | 173 | 14 | 16 |
| Bachelor's | 2,250 | (1) | 486 | 396 | 565 | 272 | 71 | 270 | 55 | 123 | 12 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

**Table B-5—Con.**

| Field and highest degree | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychologists.. | 34,889 | 35 | 4,698 | 7,164 | 5,287 | 4,909 | 4,801 | 3,694 | 1,951 | 1,186 | 730 | 434 |
| Doctorate.... | 20,404 | [1] | 1,476 | 3,939 | 3,647 | 3,245 | 3,042 | 2,495 | 1,189 | 738 | 369 | 264 |
| Professional/ medical..... | 53 | [1] | [1] | 26 | 14 | [1] | [1] | [1] | [1] | [1] | 13 | [1] |
| Master's..... | 11,034 | [1] | 2,267 | 2,324 | 1,268 | 1,322 | 1,343 | 982 | 762 | 294 | 318 | 154 |
| Bachelor's ... | 3,398 | 35 | 955 | 875 | 358 | 342 | 416 | 217 | [1] | 154 | 30 | 16 |
| Associate.... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree ... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Social scientists | 47,940 | 30 | 5,732 | 9,628 | 7,320 | 5,896 | 4,976 | 5,726 | 3,476 | 2,693 | 1,556 | 907 |
| Doctorate.... | 21,477 | 15 | 977 | 4,198 | 3,666 | 3,166 | 2,603 | 2,410 | 1,600 | 1,438 | 881 | 523 |
| Professional/ medical..... | 240 | [1] | 17 | 16 | 17 | [1] | 48 | 34 | 28 | 61 | 19 | [1] |
| Master's..... | 14,241 | 15 | 2,075 | 3,460 | 1,989 | 1,715 | 1,335 | 1,449 | 1,090 | 600 | 363 | 150 |
| Bachelor's ... | 11,982 | [1] | 2,663 | 1,954 | 1,648 | 1,015 | 990 | 1,833 | 758 | 594 | 293 | 234 |
| Associate.... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree ... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Economists ... | 19,754 | 15 | 1,800 | 3,552 | 2,840 | 2,596 | 2,006 | 2,719 | 1,369 | 1,479 | 841 | 537 |
| Doctorate.... | 8,792 | 15 | 397 | 1,543 | 1,503 | 1,221 | 1,023 | 840 | 583 | 671 | 595 | 401 |
| Professional/ medical..... | 181 | [1] | [1] | [1] | 17 | [1] | 34 | 34 | 16 | 61 | 19 | [1] |
| Master's..... | 5,119 | [1] | 534 | 1,167 | 698 | 750 | 354 | 700 | 435 | 338 | 124 | 19 |
| Bachelor's ... | 5,662 | [1] | 869 | 842 | 622 | 625 | 595 | 1,145 | 335 | 409 | 103 | 117 |
| Associate.... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree ... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Sociologists/ anthropologists | 11,158 | [1] | 1,495 | 2,706 | 1,844 | 1,202 | 1,158 | 1,413 | 648 | 528 | 81 | 83 |
| Doctorate.... | 6,470 | [1] | 142 | 1,359 | 1,151 | 1,051 | 837 | 878 | 491 | 409 | 69 | 83 |
| Professional/ medical..... | 14 | [1] | [1] | [1] | [1] | [1] | 14 | [1] | [1] | [1] | [1] | [1] |
| Master's..... | 2,937 | [1] | 726 | 1,078 | 279 | 119 | 230 | 325 | 157 | 11 | 12 | [1] |
| Bachelor's ... | 1,737 | [1] | 627 | 269 | 414 | 32 | 77 | 210 | [1] | 108 | [1] | [1] |
| Associate.... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree ... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other social scientists..... | 17,028 | 15 | 2,437 | 3,370 | 2,636 | 2,098 | 1,812 | 1,594 | 1,459 | 686 | 634 | 287 |
| Doctorate.... | 6,215 | [1] | 438 | 1,296 | 1,012 | 894 | 743 | 692 | 526 | 358 | 217 | 39 |
| Professional/ medical..... | 45 | [1] | 17 | 16 | [1] | [1] | [1] | [1] | 12 | [1] | [1] | [1] |
| Master's..... | 6,185 | 15 | 815 | 1,215 | 1,012 | 846 | 751 | 424 | 498 | 251 | 227 | 131 |
| Bachelor's ... | 4,583 | [1] | 1,167 | 843 | 612 | 358 | 318 | 478 | 423 | 77 | 190 | 117 |
| Associate.... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree ... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

## Table B-6.—Number of scientists and engineers by field, highest degree, and race: 1974

| Field and highest degree | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Total, all fields | 1,079,698 | 1,039,010 | 11,102 | 903 | 24,397 | 5,186 |
| Doctorate | 180,870 | 170,270 | 1,952 | 376 | 6,919 | 1,353 |
| Professional/medical | 3,248 | 3,105 | 28 | (1) | 14 | 101 |
| Master's | 242,289 | 230,169 | 3,346 | 176 | 7,160 | 1,438 |
| Bachelor's | 620,396 | 603,490 | 5,565 | 244 | 8,902 | 2,195 |
| Associate | 12,539 | 12,030 | 100 | (1) | 310 | 99 |
| Other | 101 | 101 | (1) | (1) | (1) | (1) |
| No degree | 20,255 | 19,845 | 111 | 107 | 192 | (1) |
| Physical scientists | 121,011 | 113,880 | 2,208 | 240 | 3,905 | 800 |
| Doctorate | 54,665 | 51,220 | 294 | 204 | 2,603 | 344 |
| Professional/medical | 175 | 147 | 28 | (1) | (1) | (1) |
| Master's | 22,349 | 21,097 | 454 | (1) | 713 | 85 |
| Bachelor's | 43,822 | 41,396 | 1,430 | 36 | 589 | 371 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Chemists | 87,334 | 81,868 | 1,853 | 240 | 2,849 | 734 |
| Doctorate | 35,897 | 33,602 | 246 | 204 | 1,551 | 294 |
| Professional/medical | 175 | 147 | 28 | (1) | (1) | (1) |
| Master's | 14,743 | 13,791 | 342 | (1) | 541 | 69 |
| Bachelor's | 36,519 | 34,318 | 1,237 | 36 | 557 | 371 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Physicists/astronomers | 27,519 | 26,118 | 128 | (1) | 1,207 | 66 |
| Doctorate | 16,874 | 15,757 | 48 | (1) | 1,019 | 50 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 5,860 | 5,592 | 80 | (1) | 172 | 16 |
| Bachelor's | 4,785 | 4,769 | (1) | (1) | 16 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Other physical scientists | 6,158 | 5,864 | 225 | (1) | 49 | (1) |
| Doctorate | 1,894 | 1,861 | (1) | (1) | 33 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,746 | 1,714 | 32 | (1) | (1) | (1) |
| Bachelor's | 2,518 | 2,309 | 193 | (1) | 16 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematical scientists | 27,833 | 25,902 | 1,034 | 37 | 733 | 127 |
| Doctorate | 10,022 | 9,188 | 245 | (1) | 516 | 73 |
| Professional/medical | 147 | 147 | (1) | (1) | (1) | (1) |
| Master's | 9,328 | 8,698 | 381 | 19 | 176 | 54 |
| Bachelor's | 8,336 | 7,869 | 408 | 18 | 41 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematicians | 20,076 | 18,833 | 787 | 18 | 401 | 37 |
| Doctorate | 7,708 | 7,227 | 168 | (1) | 294 | 19 |
| Professional/medical | 77 | 77 | (1) | (1) | (1) | (1) |
| Master's | 6,992 | 6,583 | 325 | (1) | 66 | 18 |
| Bachelor's | 5,299 | 4,946 | 294 | 18 | 41 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 7,757 | 7,069 | 247 | 19 | 332 | 90 |
| Doctorate | 2,314 | 1,961 | 77 | (1) | 222 | 54 |
| Professional/medical | 70 | 70 | (1) | (1) | (1) | (1) |
| Master's | 2,336 | 2,115 | 56 | 19 | 110 | 36 |
| Bachelor's | 3,037 | 2,823 | 114 | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Computer specialists | 55,186 | 53,274 | 842 | 50 | 708 | 312 |
| Doctorate | 2,604 | 2,535 | (1) | (1) | 48 | 21 |
| Professional/medical | 153 | 153 | (1) | (1) | (1) | (1) |
| Master's | 14,815 | 14,403 | 136 | (1) | 180 | 96 |
| Bachelor's | 37,614 | 36,183 | 706 | 50 | 480 | 195 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 29,466 | 28,913 | 47 | 70 | 409 | 27 |
| Doctorate | 8,054 | 7,758 | (1) | 70 | 226 | (1) |
| Professional/medical | 62 | 62 | (1) | (1) | (1) | (1) |
| Master's | 8,443 | 8,302 | 36 | (1) | 106 | (1) |
| Bachelor's | 12,907 | 12,791 | 12 | (1) | 77 | 27 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

45

Table B-6—Con.

| Field and highest degree | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Earth scientists | 24,589 | 24,201 | 35 | 70 | 256 | 27 |
| Doctorate | 6,253 | 6,053 | (1) | 70 | 130 | (1) |
| Professional/medical | 62 | 62 | (1) | (1) | (1) | (1) |
| Master's | 6,927 | 6,819 | 35 | (1) | 73 | (1) |
| Bachelor's | 11,347 | 11,267 | (1) | (1) | 53 | 27 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | 1,563 | 1,474 | (1) | (1) | 89 | (1) |
| Doctorate | 957 | 885 | (1) | (1) | 72 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 449 | 432 | (1) | (1) | 17 | (1) |
| Bachelor's | 157 | 157 | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Atmospheric scientists | 3,314 | 3,238 | 12 | (1) | 64 | (1) |
| Doctorate | 844 | 820 | (1) | (1) | 24 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,067 | 1,051 | (1) | (1) | 16 | (1) |
| Bachelor's | 1,403 | 1,367 | 12 | (1) | 24 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineers | 687,911 | 664,721 | 4,492 | 336 | 15,003 | 3,359 |
| Doctorate | 31,879 | 28,641 | 350 | 44 | 2,260 | 584 |
| Professional/medical | 1,002 | 929 | (1) | (1) | (1) | 73 |
| Master's | 145,290 | 137,953 | 1,148 | 102 | 5,034 | 1,053 |
| Bachelor's | 476,845 | 465,222 | 2,783 | 83 | 7,207 | 1,550 |
| Associate | 12,539 | 12,030 | 100 | (1) | 310 | 99 |
| Other | 101 | 101 | (1) | (1) | (1) | (1) |
| No degree | 20,255 | 19,845 | 111 | 107 | 192 | (1) |
| Life scientists | 75,462 | 72,059 | 1,173 | 108 | 1,768 | 354 |
| Doctorate | 31,765 | 30,248 | 513 | 16 | 707 | 281 |
| Professional/medical | 1,416 | 1,374 | (1) | (1) | 14 | 28 |
| Master's | 16,789 | 15,575 | 544 | 35 | 621 | 14 |
| Bachelor's | 25,492 | 24,862 | 116 | 57 | 426 | 31 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |

| Field and highest degree | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Biological scientists | 35,935 | 33,643 | 846 | 65 | 1,181 | 200 |
| Doctorate | 19,981 | 18,863 | 404 | 16 | 525 | 183 |
| Professional/medical | 153 | 153 | (1) | (1) | (1) | (1) |
| Master's | 9,187 | 8,360 | 379 | 35 | 413 | (1) |
| Bachelor's | 6,614 | 6,277 | 63 | 14 | 243 | 17 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 28,790 | 28,312 | 117 | 43 | 305 | 13 |
| Doctorate | 6,519 | 6,390 | 45 | (1) | 71 | 13 |
| Professional/medical | 25 | 25 | (1) | (1) | (1) | (1) |
| Master's | 5,618 | 5,420 | 47 | (1) | 151 | (1) |
| Bachelor's | 16,628 | 16,477 | 25 | 43 | 83 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 10,737 | 10,104 | 210 | (1) | 282 | 141 |
| Doctorate | 5,265 | 5,005 | 64 | (1) | 111 | 85 |
| Professional/medical | 1,238 | 1,196 | (1) | (1) | 14 | 28 |
| Master's | 1,984 | 1,795 | 118 | (1) | 57 | 14 |
| Bachelor's | 2,250 | 2,108 | 28 | (1) | 100 | 14 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Psychologists | 34,889 | 34,052 | 636 | 18 | 97 | 86 |
| Doctorate | 20,404 | 19,990 | 325 | 18 | 33 | 38 |
| Professional/medical | 53 | 53 | (1) | (1) | (1) | (1) |
| Master's | 11,034 | 10,630 | 311 | (1) | 45 | 48 |
| Bachelor's | 3,398 | 3,379 | (1) | (1) | 19 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Social scientists | 47,940 | 46,229 | 672 | 44 | 874 | 121 |
| Doctorate | 21,477 | 20,690 | 225 | 24 | 526 | 12 |
| Professional/medical | 240 | 240 | (1) | (1) | (1) | (1) |
| Master's | 14,241 | 13,511 | 337 | 20 | 285 | 88 |
| Bachelor's | 11,962 | 11,788 | 110 | (1) | 63 | 21 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |

Table B-6—Con.

| Field and highest degree | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Economists | 19,754 | 18,823 | 237 | 44 | 557 | 93 |
| Doctorate | 8,792 | 8,317 | 138 | 24 | 313 | [1] |
| Professional/medical | 181 | 181 | [1] | [1] | [1] | [1] |
| Master's | 5,119 | 4,783 | 39 | 20 | 205 | 72 |
| Bachelor's | 5,662 | 5,542 | 60 | [1] | 39 | 21 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] |
| Sociologists/ anthropologists | 11,158 | 10,845 | 179 | [1] | 122 | 12 |
| Doctorate | 6,470 | 6,291 | 72 | [1] | 95 | 12 |
| Professional/medical | 14 | 14 | [1] | [1] | [1] | [1] |
| Master's | 2,937 | 2,830 | 91 | [1] | 16 | [1] |
| Bachelor's | 1,737 | 1,710 | 16 | [1] | 11 | [1] |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] |
| Other social scientists | 17,028 | 16,561 | 256 | [1] | 195 | 16 |
| Doctorate | 6,215 | 6,082 | 15 | [1] | 118 | [1] |
| Professional/medical | 45 | 45 | [1] | [1] | [1] | [1] |
| Master's | 6,185 | 5,898 | 207 | [1] | 64 | 16 |
| Bachelor's | 4,583 | 4,536 | 34 | [1] | 13 | [1] |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

**Table B-7.—Number of scientists and engineers by field, highest degree, and nonformal training in 1972:1974**

| Field and highest degree | Total | With nonformal training in 1972 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Total, all fields | 1,079,698 | 397,438 | 187,159 | 8,595 | 41,234 | 165,691 | 45,180 | 89,680 | 471,772 | 210,488 |
| Doctorate | 180,870 | 44,787 | 18,613 | 663 | 3,427 | 11,190 | 5,075 | 16,207 | 105,293 | 30,790 |
| Professional/medical | 3,248 | 1,198 | 457 | 35 | 41 | 207 | 196 | 438 | 1,459 | 591 |
| Master's | 242,289 | 93,138 | 40,844 | 1,924 | 10,092 | 39,414 | 10,054 | 22,130 | 99,942 | 49,209 |
| Bachelor's | 620,396 | 245,125 | 120,811 | 5,755 | 26,209 | 108,697 | 28,605 | 48,317 | 252,477 | 122,794 |
| Associate | 12,539 | 5,514 | 2,824 | 164 | 583 | 2,949 | 448 | 775 | 4,385 | 2,640 |
| Other | 101 | 52 | 39 | (1) | (1) | (1) | (1) | 13 | 49 | (1) |
| No degree | 20,255 | 7,624 | 3,571 | 54 | 882 | 3,234 | 802 | 1,800 | 8,167 | 4,464 |
| Physical scientists | 121,011 | 37,640 | 17,421 | 322 | 3,410 | 12,551 | 5,082 | 9,502 | 61,369 | 22,002 |
| Doctorate | 54,665 | 14,085 | 5,842 | 138 | 906 | 4,244 | 1,831 | 4,246 | 31,851 | 8,729 |
| Professional/medical | 175 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | 123 | 52 |
| Master's | 22,349 | 7,781 | 3,550 | 80 | 703 | 2,741 | 700 | 2,130 | 10,491 | 4,077 |
| Bachelor's | 43,822 | 15,774 | 8,029 | 104 | 1,801 | 5,566 | 2,551 | 3,126 | 18,904 | 9,144 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chemists | 87,334 | 28,448 | 13,453 | 211 | 2,704 | 9,543 | 3,752 | 7,394 | 42,203 | 16,683 |
| Doctorate | 35,897 | 10,579 | 4,613 | 100 | 691 | 3,307 | 1,159 | 3,241 | 19,404 | 5,914 |
| Professional/medical | 175 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | 123 | 52 |
| Master's | 14,743 | 5,175 | 2,233 | 49 | 526 | 1,878 | 492 | 1,555 | 6,627 | 2,941 |
| Bachelor's | 36,519 | 12,694 | 6,607 | 62 | 1,487 | 4,358 | 2,101 | 2,598 | 16,049 | 7,776 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Physicists/astronomers | 27,519 | 6,485 | 2,402 | 82 | 632 | 1,910 | 950 | 1,640 | 16,586 | 4,448 |
| Doctorate | 16,874 | 2,915 | 1,042 | 38 | 215 | 698 | 584 | 877 | 11,390 | 2,569 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 5,860 | 1,944 | 830 | 18 | 165 | 549 | 169 | 445 | 3,028 | 888 |
| Bachelor's | 4,785 | 1,626 | 530 | 26 | 252 | 663 | 197 | 318 | 2,168 | 991 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other physical scientists | 6,158 | 2,707 | 1,566 | 29 | 74 | 1,098 | 380 | 468 | 2,580 | 871 |
| Doctorate | 1,894 | 591 | 187 | (1) | (1) | 239 | 88 | 128 | 1,057 | 246 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,746 | 662 | 487 | 13 | 12 | 314 | 39 | 130 | 836 | 248 |
| Bachelor's | 2,518 | 1,454 | 892 | 16 | 62 | 545 | 253 | 210 | 687 | 377 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

Table B-7—Con.

| Field and highest degree | Total | With nonformal training in 1972 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Mathematical scientists | 27,833 | 7,758 | 3,648 | 76 | 825 | 3,094 | 741 | 1,930 | 14,573 | 5,502 |
| Doctorate | 10,022 | 1,183 | 401 | 12 | 43 | 160 | 156 | 560 | 7,096 | 1,743 |
| Professional/medical | 147 | 135 | 52 | (1) | (1) | 58 | 25 | (1) | (1) | 12 |
| Master's | 9,328 | 2,704 | 964 | 13 | 212 | 1,134 | 167 | 835 | 4,570 | 2,054 |
| Bachelor's | 8,336 | 3,736 | 2,231 | 51 | 570 | 1,742 | 393 | 535 | 2,907 | 1,693 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematicians | 20,076 | 5,584 | 2,678 | 64 | 742 | 2,432 | 451 | 1,331 | 10,760 | 3,732 |
| Doctorate | 7,708 | 804 | 276 | (1) | 43 | 118 | 64 | 393 | 5,595 | 1,309 |
| Professional/medical | 77 | 77 | 52 | (1) | (1) | (1) | 25 | (1) | (1) | (1) |
| Master's | 6,992 | 1,845 | 604 | 13 | 159 | 881 | 100 | 552 | 3,679 | 1,468 |
| Bachelor's | 5,299 | 2,858 | 1,746 | 51 | 540 | 1,433 | 262 | 396 | 1,486 | 955 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 7,757 | 2,174 | 970 | 12 | 83 | 662 | 290 | 599 | 3,813 | 1,770 |
| Doctorate | 2,314 | 379 | 125 | 12 | (1) | 42 | 92 | 167 | 1,501 | 434 |
| Professional/medical | 70 | 58 | (1) | (1) | (1) | 58 | (1) | (1) | (1) | 12 |
| Master's | 2,336 | 859 | 360 | (1) | 53 | 253 | 67 | 283 | 891 | 586 |
| Bachelor's | 3,037 | 878 | 485 | (1) | 30 | 309 | 131 | 149 | 1,421 | 738 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Computer specialists | 55,186 | 33,680 | 19,738 | 404 | 2,434 | 19,417 | 3,169 | 7,310 | 13,329 | 8,177 |
| Doctorate | 2,604 | 841 | 402 | (1) | 30 | 513 | 153 | 292 | 1,325 | 438 |
| Professional/medical | 153 | 136 | 66 | (1) | (1) | 72 | 68 | (1) | (1) | 17 |
| Master's | 14,815 | 8,936 | 5,084 | 107 | 802 | 5,100 | 652 | 1,782 | 3,546 | 2,333 |
| Bachelor's | 37,614 | 23,767 | 14,187 | 297 | 1,602 | 13,732 | 2,296 | 5,236 | 8,456 | 5,389 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 29,466 | 10,403 | 5,375 | 169 | 1,261 | 3,959 | 1,345 | 2,283 | 13,134 | 5,929 |
| Doctorate | 8,054 | 2,109 | 1,025 | (1) | 140 | 667 | 314 | 467 | 4,519 | 1,426 |
| Professional/medical | 62 | 25 | 13 | (1) | (1) | (1) | (1) | 12 | 37 | (1) |
| Master's | 8,443 | 3,401 | 1,819 | 82 | 477 | 1,490 | 519 | 633 | 3,342 | 1,700 |
| Bachelor's | 12,907 | 4,868 | 2,518 | 87 | 644 | 1,802 | 512 | 1,171 | 5,236 | 2,803 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

Table B-7—Con.

| Field and highest degree | Total | With nonformal training in 1972 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Earth scientists | 24,589 | 8,502 | 4,536 | 81 | 761 | 3,411 | 1,045 | 2,007 | 10,889 | 5,198 |
| Doctorate | 6,253 | 1,558 | 632 | (1) | 127 | 564 | 277 | 362 | 3,542 | 1,153 |
| Professional/medical | 62 | 25 | 13 | (1) | (1) | (1) | (1) | 12 | 37 | (1) |
| Master's | 6,927 | 2,815 | 1,635 | 56 | 272 | 1,315 | 398 | 560 | 2,639 | 1,473 |
| Bachelor's | 11,347 | 4,104 | 2,256 | 25 | 362 | 1,532 | 370 | 1,073 | 4,671 | 2,572 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | 1,563 | 713 | 386 | 22 | 99 | 186 | 132 | 93 | 617 | 233 |
| Doctorate | 957 | 388 | 287 | (1) | 13 | 77 | 13 | 60 | 383 | 186 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 449 | 227 | 48 | 9 | 49 | 73 | 94 | 33 | 175 | 47 |
| Bachelor's | 157 | 98 | 51 | 13 | 37 | 36 | 25 | (1) | 59 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Atmospheric scientists | 3,314 | 1,188 | 453 | 66 | 401 | 362 | 168 | 183 | 1,628 | 498 |
| Doctorate | 844 | 163 | 106 | (1) | (1) | 26 | 24 | 45 | 594 | 87 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,067 | 359 | 136 | 17 | 156 | 102 | 27 | 40 | 528 | 180 |
| Bachelor's | 1,403 | 666 | 211 | 49 | 245 | 234 | 117 | 98 | 506 | 231 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | |
| Engineers | 687,911 | 257,540 | 115,310 | 6,582 | 28,364 | 113,604 | 29,405 | 51,409 | 291,969 | 138,402 |
| Doctorate | 31,879 | 8,721 | 3,577 | 188 | 1,024 | 3,474 | 838 | 1,875 | 17,125 | 6,033 |
| Professional/medical | 1,002 | 303 | 122 | 35 | (1) | 36 | 66 | 83 | 464 | 235 |
| Master's | 145,290 | 55,499 | 21,456 | 1,351 | 6,729 | 24,982 | 6,229 | 12,324 | 59,831 | 29,960 |
| Bachelor's | 476,845 | 179,827 | 83,721 | 4,790 | 19,146 | 78,929 | 21,022 | 34,539 | 201,948 | 95,070 |
| Associate | 12,539 | 5,514 | 2,824 | 164 | 583 | 2,949 | 448 | 775 | 4,385 | 2,640 |
| Other | 101 | 52 | 39 | (1) | (1) | (1) | (1) | 13 | 49 | (1) |
| No degree | 20,255 | 7,624 | 3,571 | 54 | 882 | 3,234 | 802 | 1,800 | 8,167 | 4,464 |
| Life scientists | 75,462 | 26,214 | 14,448 | 453 | 2,843 | 7,334 | 2,883 | 7,840 | 34,909 | 14,339 |
| Doctorate | 31,765 | 8,441 | 3,441 | 171 | 698 | 1,060 | 1,038 | 3,737 | 18,354 | 4,970 |
| Professional/medical | 1,416 | 539 | 158 | (1) | 25 | 41 | 37 | 330 | 702 | 175 |
| Master's | 16,789 | 5,441 | 3,110 | 187 | 590 | 1,595 | 615 | 1,328 | 7,947 | 3,401 |
| Bachelor's | 25,492 | 11,793 | 7,739 | 95 | 1,530 | 4,638 | 1,193 | 2,445 | 7,906 | 5,793 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

Table B-7—Con.

| Field and highest degree | Total | With nonformal training in 1972 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Biological scientists | 35,935 | 9,769 | 5,418 | 240 | 577 | 1,881 | 992 | 3,018 | 19,125 | 7,041 |
| Doctorate | 19,981 | 4,679 | 2,226 | 148 | 258 | 553 | 475 | 1,778 | 11,902 | 3,400 |
| Professional/medical | 153 | 106 | 26 | (1) | (1) | (1) | (1) | 80 | 24 | 23 |
| Master's | 9,187 | 2,309 | 1,334 | 54 | 164 | 528 | 352 | 512 | 4,918 | 1,960 |
| Bachelor's | 6,614 | 2,675 | 1,832 | 38 | 155 | 800 | 165 | 648 | 2,281 | 1,658 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 28,790 | 12,653 | 7,508 | 190 | 1,814 | 4,871 | 1,311 | 3,112 | 10,262 | 5,875 |
| Doctorate | 6,519 | 1,951 | 707 | (1) | 248 | 289 | 379 | 837 | 3,636 | 932 |
| Professional/medical | 25 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | 13 | 12 |
| Master's | 5,618 | 2,561 | 1,551 | 133 | 376 | 987 | 147 | 569 | 1,941 | 1,116 |
| Bachelor's | 16,628 | 8,141 | 5,250 | 57 | 1,190 | 3,595 | 785 | 1,706 | 4,672 | 3,815 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 10,737 | 3,792 | 1,522 | 23 | 452 | 582 | 580 | 1,710 | 5,522 | 1,423 |
| Doctorate | 5,265 | 1,811 | 508 | 23 | 192 | 218 | 184 | 1,122 | 2,816 | 636 |
| Professional/medical | 1,238 | 433 | 132 | (1) | 25 | 41 | 37 | 250 | 665 | 140 |
| Master's | 1,984 | 571 | 225 | (1) | 50 | 80 | 116 | 247 | 1,088 | 325 |
| Bachelor's | 2,250 | 977 | 657 | (1) | 185 | 243 | 243 | 91 | 953 | 320 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Psychologists | 34,889 | 12,207 | 6,216 | 223 | 655 | 2,296 | 1,283 | 5,386 | 15,940 | 6,742 |
| Doctorate | 20,404 | 5,903 | 2,700 | 75 | 400 | 687 | 456 | 3,298 | 10,713 | 3,788 |
| Professional/medical | 53 | 27 | 14 | (1) | (1) | (1) | (1) | 13 | 13 | 13 |
| Master's | 11,034 | 4,767 | 2,594 | 29 | 255 | 993 | 570 | 1,810 | 3,968 | 2,299 |
| Bachelor's | 3,398 | 1,510 | 908 | 119 | (1) | 616 | 257 | 265 | 1,246 | 642 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Social scientists | 47,940 | 11,996 | 5,003 | 366 | 1,442 | 3,436 | 1,272 | 4,020 | 26,549 | 9,395 |
| Doctorate | 21,477 | 3,504 | 1,225 | 79 | 186 | 385 | 289 | 1,732 | 14,310 | 3,663 |
| Professional/medical | 240 | 33 | 33 | (1) | 16 | (1) | (1) | (1) | 120 | 87 |
| Master's | 14,241 | 4,609 | 2,267 | 75 | 324 | 1,379 | 602 | 1,288 | 6,247 | 3,385 |
| Bachelor's | 11,982 | 3,850 | 1,478 | 212 | 916 | 1,672 | 381 | 1,000 | 5,872 | 2,260 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

Table B-7—Con.

| Field and highest degree | Total | With nonformal training in 1972 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Economists | 19,754 | 4,627 | 2,319 | 110 | 439 | 1,563 | 585 | 1,191 | 11,024 | 4,103 |
| Doctorate | 8,792 | 1,401 | 635 | 18 | 80 | 203 | 147 | 535 | 5,792 | 1,599 |
| Professional/medical | 181 | 17 | 17 | [1] | [1] | [1] | [1] | [1] | 77 | 87 |
| Master's | 5,119 | 1,508 | 738 | 75 | 109 | 564 | 215 | 342 | 2,364 | 1,247 |
| Bachelor's | 5,662 | 1,701 | 929 | 17 | 250 | 796 | 223 | 314 | 2,791 | 1,170 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Sociologists/anthropologists | 11,158 | 2,142 | 820 | [1] | 331 | 486 | 350 | 935 | 6,847 | 2,169 |
| Doctorate | 6,470 | 870 | 203 | [1] | 42 | 13 | 126 | 531 | 4,541 | 1,059 |
| Professional/medical | 14 | [1] | [1] | [1] | [1] | [1] | [1] | [1] | 14 | [1] |
| Master's | 2,937 | 774 | 383 | [1] | 13 | 187 | 107 | 168 | 1,578 | 585 |
| Bachelor's | 1,737 | 498 | 234 | [1] | 276 | 286 | 117 | 236 | 714 | 525 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other social scientists | 17,028 | 5,227 | 1,864 | 256 | 672 | 1,387 | 337 | 1,894 | 8,678 | 3,123 |
| Doctorate | 6,215 | 1,233 | 387 | 61 | 64 | 169 | 16 | 666 | 3,977 | 1,005 |
| Professional/medical | 45 | 16 | 16 | [1] | 16 | [1] | [1] | [1] | 29 | [1] |
| Master's | 6,185 | 2,327 | 1,146 | [1] | 202 | 628 | 280 | 778 | 2,305 | 1,553 |
| Bachelor's | 4,583 | 1,651 | 315 | 195 | 390 | 590 | 41 | 450 | 2,367 | 565 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |

[1] No cases reported.

Note: The sum of the types of nonformal training may exceed the total with such training since persons could have reported more than one type of training.

SOURCE: National Science Foundation, National Sample, 1974.

**Table B-8.—Number of scientists and engineers by field, highest degree, and nonformal training in 1973: 1974**

| Field and highest degree | Total | With nonformal training in 1973 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Total, all fields | 1,079,698 | 406,427 | 194,367 | 9,192 | 41,536 | 180,372 | 44,715 | 81,018 | 488,886 | 184,385 |
| Doctorate | 180,870 | 43,371 | 18,579 | 698 | 3,329 | 11,666 | 4,801 | 14,931 | 107,730 | 29,769 |
| Professional/medical | 3,248 | 1,102 | 508 | 35 | 41 | 227 | 102 | 384 | 1,498 | 648 |
| Master's | 242,289 | 92,905 | 42,094 | 1,786 | 9,740 | 40,476 | 9,486 | 20,025 | 102,645 | 46,739 |
| Bachelor's | 620,396 | 254,310 | 125,946 | 6,290 | 26,453 | 121,201 | 28,866 | 43,416 | 263,946 | 102,140 |
| Associate | 12,539 | 6,092 | 3,365 | 164 | 715 | 3,190 | 494 | 752 | 4,483 | 1,964 |
| Other | 101 | 89 | 39 | (1) | (1) | 37 | (1) | 13 | 12 | (1) |
| No degree | 20,255 | 8,558 | 3,836 | 219 | 1,258 | 3,575 | 966 | 1,497 | 8,572 | 3,125 |
| Physical scientists | 121,011 | 37,184 | 17,596 | 352 | 3,250 | 12,809 | 4,506 | 9,563 | 63,371 | 20,456 |
| Doctorate | 54,665 | 13,041 | 5,661 | 139 | 856 | 3,935 | 1,372 | 4,215 | 32,862 | 8,762 |
| Professional/medical | 175 | 52 | (1) | (1) | (1) | (1) | 28 | 24 | 123 | (1) |
| Master's | 22,349 | 7,185 | 3,485 | 93 | 738 | 2,708 | 641 | 1,783 | 10,779 | 4,385 |
| Bachelor's | 43,822 | 16,906 | 8,450 | 120 | 1,656 | 6,166 | 2,465 | 3,541 | 19,607 | 7,309 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chemists | 87,334 | 28,851 | 13,579 | 212 | 2,717 | 10,125 | 3,480 | 7,582 | 43,646 | 14,837 |
| Doctorate | 35,897 | 10,101 | 4,475 | 100 | 629 | 3,255 | 964 | 3,338 | 20,120 | 5,676 |
| Professional/medical | 175 | 52 | (1) | (1) | (1) | (1) | 28 | 24 | 123 | (1) |
| Master's | 14,743 | 4,969 | 2,217 | 62 | 649 | 2,041 | 461 | 1,243 | 6,732 | 3,052 |
| Bachelor's | 36,519 | 13,739 | 6,887 | 50 | 1,439 | 4,829 | 2,027 | 2,977 | 16,671 | 6,109 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Physicists/astronomers | 27,519 | 5,832 | 2,524 | 111 | 459 | 1,688 | 724 | 1,560 | 17,063 | 4,624 |
| Doctorate | 16,874 | 2,556 | 1,086 | 39 | 214 | 481 | 395 | 782 | 11,596 | 2,722 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 5,860 | 1,722 | 841 | 18 | 89 | 461 | 168 | 447 | 3,120 | 1,018 |
| Bachelor's | 4,785 | 1,554 | 598 | 54 | 156 | 746 | 161 | 331 | 2,347 | 884 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other physical scientists | 6,158 | 2,501 | 1,493 | 29 | 74 | 996 | 302 | 421 | 2,662 | 995 |
| Doctorate | 1,894 | 384 | 101 | (1) | 13 | 199 | 13 | 95 | 1,146 | 364 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,746 | 504 | 427 | 13 | (1) | 206 | 12 | 93 | 927 | 315 |
| Bachelor's | 2,518 | 1,613 | 965 | 16 | 61 | 581 | 277 | 233 | 589 | 316 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table

Table B-8—Con.

| Field and highest degree | Total | With nonformal training in 1973 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Mathematical scientists | 27,833 | 8,208 | 4,094 | 90 | 691 | 3,352 | 1,067 | 1,578 | 15,113 | 4,512 |
| Doctorate | 10,022 | 1,170 | 420 | 12 | 13 | 235 | 214 | 413 | 7,241 | 1,611 |
| Professional/medical | 147 | 65 | 52 | (1) | (1) | (1) | 13 | (1) | (1) | 82 |
| Master's | 9,328 | 2,911 | 1,277 | 26 | 166 | 1,073 | 371 | 650 | 4,741 | 1,676 |
| Bachelor's | 8,336 | 4,062 | 2,345 | 52 | 512 | 2,044 | 469 | 515 | 3,131 | 1,143 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematicians | 20,076 | 5,787 | 3,156 | 65 | 553 | 2,461 | 526 | 1,132 | 11,288 | 3,001 |
| Doctorate | 7,708 | 746 | 294 | (1) | 13 | 137 | 64 | 314 | 5,715 | 1,247 |
| Professional/medical | 77 | 65 | 52 | (1) | (1) | (1) | 13 | (1) | (1) | 12 |
| Master's | 6,992 | 1,954 | 934 | 13 | 142 | 745 | 171 | 470 | 3,881 | 1,157 |
| Bachelor's | 5,299 | 3,022 | 1,876 | 52 | 398 | 1,579 | 278 | 348 | 1,692 | 585 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 7,757 | 2,421 | 938 | 25 | 138 | 891 | 541 | 446 | 3,825 | 1,511 |
| Doctorate | 2,314 | 424 | 126 | 12 | (1) | 98 | 150 | 99 | 1,526 | 364 |
| Professional/medical | 70 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | 70 |
| Master's | 2,336 | 957 | 343 | 13 | 24 | 328 | 200 | 180 | 860 | 519 |
| Bachelor's | 3,037 | 1,040 | 466 | (1) | 114 | 465 | 191 | 167 | 1,439 | 558 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Computer specialists | 55,186 | 33,580 | 20,172 | 446 | 1,935 | 19,750 | 3,599 | 6,448 | 13,823 | 7,783 |
| Doctorate | 2,604 | 896 | 505 | (1) | 46 | 424 | 189 | 202 | 1,340 | 368 |
| Professional/medical | 153 | 102 | 82 | (1) | (1) | 72 | 17 | (1) | (1) | 51 |
| Master's | 14,815 | 8,367 | 4,828 | 52 | 561 | 4,925 | 840 | 1,665 | 3,705 | 2,743 |
| Bachelor's | 37,614 | 24,215 | 14,697 | 394 | 1,328 | 14,329 | 2,553 | 4,581 | 8,778 | 4,621 |
| Associate | 0 | 0 | 0 | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 29,466 | 10,245 | 5,125 | 177 | 1,314 | 4,466 | 1,023 | 2,035 | 13,727 | 5,494 |
| Doctorate | 8,054 | 1,834 | 827 | 12 | 59 | 834 | 243 | 395 | 4,899 | 1,321 |
| Professional/medical | 62 | 25 | 13 | (1) | (1) | 12 | (1) | (1) | 37 | (1) |
| Master's | 8,443 | 3,267 | 1,817 | 37 | 508 | 1,633 | 228 | 611 | 3,336 | 1,840 |
| Bachelor's | 12,907 | 5,119 | 2,468 | 128 | 747 | 1,987 | 552 | 1,029 | 5,456 | 2,333 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

Table B-8—Con.

| Field and highest degree | Total | With nonformal training in 1973 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Earth scientists | 24,589 | 8,745 | 4,460 | 86 | 905 | 3,889 | 866 | 1,868 | 11,292 | 4,552 |
| Doctorate | 6,253 | 1,499 | 576 | 12 | 59 | 743 | 218 | 327 | 3,762 | 992 |
| Professional/medical | 62 | 25 | 13 | (1) | (1) | 12 | (1) | (1) | 37 | (1) |
| Master's | 6,927 | 2,774 | 1,628 | 25 | 380 | 1,418 | 201 | 539 | 2,601 | 1,552 |
| Bachelor's | 11,347 | 4,447 | 2,243 | 49 | 466 | 1,716 | 447 | 1,002 | 4,892 | 2,008 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | 1,563 | 465 | 330 | 25 | 49 | 162 | 13 | 57 | 761 | 337 |
| Doctorate | 957 | 253 | 214 | (1) | (1) | 65 | 13 | 23 | 469 | 235 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 449 | 138 | 65 | 12 | 12 | 73 | (1) | 34 | 233 | 78 |
| Bachelor's | 157 | 74 | 51 | 13 | 37 | 24 | (1) | (1) | 59 | 24 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Atmospheric scientists | 3,314 | 1,035 | 335 | 66 | 360 | 415 | 144 | 110 | 1,674 | 605 |
| Doctorate | 844 | 82 | 37 | (1) | (1) | 26 | 12 | 45 | 668 | 94 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,067 | 355 | 124 | (1) | 116 | 142 | 27 | 38 | 502 | 210 |
| Bachelor's | 1,403 | 598 | 174 | 66 | 244 | 247 | 105 | 27 | 504 | 301 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineers | 667,911 | 266,237 | 120,176 | 6,901 | 29,402 | 126,321 | 28,984 | 45,437 | 302,639 | 119,035 |
| Doctorate | 31,879 | 9,315 | 3,585 | 191 | 1,245 | 3,892 | 749 | 1,723 | 16,938 | 5,626 |
| Professional/medical | 1,002 | 277 | 96 | 35 | (1) | 102 | (1) | 83 | 452 | 273 |
| Master's | 145,290 | 56,052 | 22,290 | 1,271 | 6,490 | 26,268 | 5,688 | 10,933 | 61,309 | 27,929 |
| Bachelor's | 476,845 | 185,854 | 86,965 | 5,021 | 19,694 | 89,257 | 21,087 | 30,436 | 210,873 | 80,118 |
| Associate | 12,539 | 6,092 | 3,365 | 164 | 715 | 3,190 | 494 | 752 | 4,483 | 1,964 |
| Other | 101 | 89 | 39 | (1) | (1) | 37 | (1) | 13 | 12 | (1) |
| No degree | 20,255 | 8,558 | 3,836 | 219 | 1,258 | 3,575 | 966 | 1,497 | 8,572 | 3,125 |
| Life scientists | 75,462 | 26,968 | 15,035 | 586 | 2,847 | 8,035 | 3,099 | 7,258 | 35,891 | 12,580 |
| Doctorate | 31,765 | 7,922 | 3,440 | 151 | 559 | 1,251 | 1,043 | 3,128 | 18,641 | 5,194 |
| Professional/medical | 1,416 | 486 | 183 | (1) | 25 | 41 | 25 | 264 | 753 | 177 |
| Master's | 16,789 | 5,936 | 3,236 | 191 | 643 | 1,787 | 822 | 1,482 | 7,913 | 2,940 |
| Bachelor's | 25,492 | 12,644 | 8,176 | 244 | 1,620 | 4,956 | 1,209 | 2,384 | 8,579 | 4,269 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

Table B-8—Con.

| Field and highest degree | Total | With nonformal training in 1973 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Biological scientists | 35,935 | 10,240 | 5,602 | 212 | 541 | 2,033 | 1,271 | 2,967 | 19,371 | 6,324 |
| Doctorate | 19,981 | 4,651 | 2,330 | 116 | 165 | 647 | 500 | 1,527 | 12,122 | 3,208 |
| Professional/medical | 153 | 77 | 38 | (1) | (1) | (1) | (1) | 39 | 76 | (1) |
| Master's | 9,187 | 2,623 | 1,390 | 58 | 182 | 601 | 412 | 629 | 4,783 | 1,781 |
| Bachelor's | 6,614 | 2,889 | 1,844 | 38 | 194 | 786 | 359 | 772 | 2,390 | 1,335 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 28,790 | 13,204 | 7,917 | 351 | 1,868 | 5,470 | 1,372 | 2,697 | 10,865 | 4,721 |
| Doctorate | 6,519 | 1,692 | 541 | 12 | 226 | 351 | 378 | 716 | 3,624 | 1,203 |
| Professional/medical | 25 | 13 | 13 | (1) | (1) | (1) | (1) | (1) | (1) | 12 |
| Master's | 5,618 | 2,732 | 1,659 | 133 | 358 | 1,107 | 279 | 601 | 1,998 | 888 |
| Bachelor's | 16,628 | 8,767 | 5,704 | 206 | 1,284 | 4,012 | 715 | 1,380 | 5,243 | 2,618 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 10.737 | 3,544 | 1,516 | 23 | 438 | 532 | 456 | 1,594 | 5,658 | 1,535 |
| Doctorate | 5,265 | 1,579 | 569 | 23 | 168 | 253 | 165 | 885 | 2,903 | 783 |
| Professional/medical | 1,238 | 396 | 132 | (1) | 25 | 41 | 25 | 225 | 677 | 165 |
| Master's | 1,984 | 581 | 187 | (1) | 103 | 79 | 131 | 252 | 1,132 | 271 |
| Bachelor's | 2,250 | 988 | 628 | (1) | 142 | 159 | 135 | 232 | 946 | 316 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Psychologists | 34,889 | 12,266 | 6,749 | 194 | 890 | 2,081 | 1,160 | 5,231 | 16,653 | 5,970 |
| Doctorate | 20,404 | 5,889 | 2,867 | 62 | 375 | 522 | 528 | 3,233 | 11,219 | 3,296 |
| Professional/medical | 53 | 27 | 14 | (1) | (1) | (1) | (1) | 13 | 13 | 13 |
| Master's | 11,034 | 4,674 | 2,837 | 13 | 386 | 972 | 388 | 1,660 | 4,097 | 2,263 |
| Bachelor's | 3,398 | 1,676 | 1,031 | 119 | 129 | 587 | 244 | 325 | 1,324 | 398 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Social scientists | 47,940 | 11,719 | 5,480 | 446 | 1,207 | 3,558 | 1,277 | 3,468 | 27,666 | 8,555 |
| Doctorate | 21,477 | 3,304 | 1,274 | 131 | 176 | 573 | 463 | 1,622 | 14,582 | 3,591 |
| Professional/medical | 240 | 68 | 68 | (1) | 16 | (1) | 19 | (1) | 120 | 52 |
| Master's | 14,241 | 4,513 | 2,324 | 103 | 248 | 1,110 | 508 | 1,241 | 6,765 | 2,963 |
| Bachelor's | 11,982 | 3,834 | 1,814 | 212 | 767 | 1,875 | 287 | 605 | 6,199 | 1,949 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

Table B-8—Con.

| Field and highest degree | Total | With nonformal training in 1973 | | | | | | | No nonformal training | Nonformal training not reported |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | On-the-job training | Military training, applicable to civilian occupations | Extension or correspondence courses | Employer's training programs | Adult education programs | Other training | | |
| Economists | 19,754 | 4,761 | 2,548 | 144 | 386 | 1,627 | 598 | 1,183 | 11,479 | 3,514 |
| Doctorate | 8,792 | 1,507 | 632 | 18 | 64 | 408 | 247 | 621 | 5,898 | 1,387 |
| Professional/medical | 181 | 52 | 52 | [1] | [1] | [1] | 19 | [1] | 77 | 52 |
| Master's | 5,119 | 1,688 | 908 | 92 | 54 | 572 | 195 | 363 | 2,550 | 881 |
| Bachelor's | 5,662 | 1,514 | 956 | 34 | 268 | 647 | 137 | 199 | 2,954 | 1,194 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Sociologists/anthropologists | 11,158 | 1,800 | 809 | [1] | 347 | 551 | 373 | 559 | 7,259 | 2,099 |
| Doctorate | 6,470 | 753 | 215 | [1] | 60 | 87 | 150 | 302 | 4,568 | 1,149 |
| Professional/medical | 14 | [1] | [1] | [1] | [1] | [1] | [1] | [1] | 14 | [1] |
| Master's | 2,937 | 440 | 253 | [1] | 25 | 73 | 90 | 124 | 1,813 | 684 |
| Bachelor's | 1,737 | 607 | 341 | [1] | 262 | 391 | 133 | 133 | 864 | 266 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other social scientists | 17,028 | 5,158 | 2,123 | 302 | 474 | 1,380 | 306 | 1,726 | 8,928 | 2,942 |
| Doctorate | 6,215 | 1,044 | 427 | 113 | 52 | 78 | 66 | 699 | 4,116 | 1,055 |
| Professional/medical | 45 | 16 | 16 | [1] | 16 | [1] | [1] | [1] | 29 | [1] |
| Master's | 6,185 | 2,385 | 1,163 | 11 | 169 | 465 | 223 | 754 | 2,402 | 1,398 |
| Bachelor's | 4,583 | 1,713 | 517 | 178 | 237 | 837 | 17 | 273 | 2,381 | 489 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |

[1]No cases reported.

Note: The sum of the types of nonformal training may exceed the total with such training since persons could have reported more than one type of training.

SOURCE: National Science Foundation, National Sample, 1974.

Total

**Table B-9.—Number of scientists and engineers by field, highest degree, and professional identification: 1974**

| Field and highest degree | Total | Physical scientists | Mathematical scientists | Computer specialists | Engineers | Biological scientists | Social scientists | Administrators, managers and officials | Teachers | Health occupations | Technicians and technologists | Other | Not reported |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total, all fields | 1,079,698 | 116,266 | 24,907 | 54,759 | 571,997 | 73,150 | 67,389 | 114,681 | 2,606 | 522 | 1,040 | 4,281 | 48,100 |
| Doctorate | 80,870 | 47,818 | 9,939 | 2,678 | 26,641 | 35,730 | 37,145 | 12,094 | 1,631 | 174 | 84 | 506 | 6,430 |
| Professional/medical | 3,248 | 134 | 176 | 153 | 920 | 1,466 | 262 | 14 | (1) | (1) | (1) | 14 | 109 |
| Master's | 242,289 | 24,561 | 9,177 | 14,470 | 123,649 | 15,741 | 22,279 | 21,730 | 785 | 195 | 282 | 729 | 8,691 |
| Bachelor's | 620,396 | 43,753 | 5,615 | 37,458 | 389,960 | 20,213 | 7,703 | 80,427 | 190 | 153 | 674 | 3,032 | 31,218 |
| Associate | 12,539 | (1) | (1) | (1) | 11,701 | (1) | (1) | 240 | (1) | (1) | (1) | (1) | 598 |
| Other degree | 101 | (1) | (1) | (1) | 101 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | 20,255 | (1) | (1) | (1) | 19,025 | (1) | (1) | 176 | (1) | (1) | (1) | (1) | 1,054 |
| Physical scientists | 121,011 | 88,262 | 99 | 84 | 1,888 | 9,445 | 94 | 14,669 | 419 | 173 | 84 | 443 | 5,351 |
| Doctorate | 54,665 | 39,718 | 72 | 23 | 522 | 6,866 | 30 | 4,842 | 332 | 30 | 47 | 151 | 2,032 |
| Professional/medical | 175 | 72 | (1) | (1) | (1) | 75 | (1) | (1) | (1) | (1) | (1) | (1) | 28 |
| Master's | 22,349 | 16,657 | (1) | 48 | 380 | 1,246 | 64 | 2,611 | 61 | 49 | 25 | 74 | 1,134 |
| Bachelor's | 43,822 | 31,815 | 27 | 13 | 986 | 1,258 | (1) | 7,216 | 26 | 94 | 12 | 218 | 2,157 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chemists | 87,334 | 61,368 | 87 | (1) | 1,020 | 9,378 | (1) | 10,680 | 277 | 156 | 72 | 392 | 3,904 |
| Doctorate | 35,897 | 23,754 | 72 | (1) | 259 | 6,817 | (1) | 3,373 | 226 | 13 | 47 | 127 | 1,209 |
| Professional/medical | 175 | 72 | (1) | (1) | (1) | 75 | (1) | (1) | (1) | (1) | (1) | (1) | 28 |
| Master's | 14,743 | 10,665 | (1) | (1) | 260 | 1,228 | (1) | 1,638 | 25 | 49 | 25 | 61 | 792 |
| Bachelor's | 36,519 | 26,877 | 15 | (1) | 501 | 1,258 | (1) | 5,669 | 26 | 94 | (1) | 204 | 1,875 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Physicists/astronomers | 27,519 | 21,687 | 12 | 84 | 805 | 43 | 94 | 3,293 | 119 | (1) | 12 | 39 | 1,331 |
| Doctorate | 16,874 | 14,324 | (1) | 23 | 251 | 25 | 30 | 1,350 | 83 | (1) | (1) | 12 | 776 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 5,860 | 4,590 | (1) | 48 | 69 | 18 | 64 | 710 | 36 | (1) | (1) | 13 | 312 |
| Bachelor's | 4,785 | 2,773 | 12 | 13 | 485 | (1) | (1) | 1,233 | (1) | (1) | 12 | 14 | 243 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| *Other physical scientists* | *6,158* | 5,207 | (1) | (1) | 63 | 24 | (1) | 696 | 23 | 17 | (1) | 12 | 116 |
| Doctorate | 1,894 | 1,640 | (1) | (1) | 12 | 24 | (1) | 119 | 23 | 17 | (1) | 12 | 47 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,746 | 1,402 | (1) | (1) | 51 | (1) | (1) | 263 | (1) | (1) | (1) | (1) | 30 |
| Bachelor's | 2,518 | 2,165 | (1) | (1) | (1) | (1) | (1) | 314 | (1) | (1) | (1) | (1) | 39 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematical scientists | 27,833 | 104 | 21,565 | 560 | 377 | 12 | 31 | 3,321 | 399 | (1) | 44 | 255 | 1,165 |
| Doctorate | 10,022 | 43 | 9,159 | 51 | 48 | 12 | 31 | 148 | 173 | (1) | (1) | 13 | 344 |
| Professional/medical | 147 | (1) | 147 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 9,328 | (1) | 7,624 | 111 | 102 | (1) | (1) | 896 | 194 | (1) | 13 | (1) | 388 |
| Bachelor's | 8,336 | 61 | 4,635 | 398 | 227 | (1) | (1) | 2,277 | 32 | (1) | 31 | 242 | 433 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

Table B-9—Con.

| Field and highest degree | Total | Physical scientists | Mathematical scientists | Computer specialists | Engineers | Biological scientists | Social scientists | Administrators, managers and officials | Teachers | Health occupations | Technicians and technologists | Other | Not reported |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mathematicians | 20,076 | 104 | 15,061 | 516 | 335 | 12 | (1) | 2,819 | 335 | (1) | 44 | 146 | 704 |
| Doctorate | 7,708 | 43 | 7,107 | 39 | 48 | 12 | (1) | 110 | 109 | (1) | (1) | 13 | 227 |
| Professional/medical | 77 | (1) | 77 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 6,992 | (1) | 5,777 | 93 | 60 | (1) | (1) | 572 | 194 | (1) | 13 | (1) | 283 |
| Bachelor's | 5,299 | 61 | 2,100 | 384 | 227 | (1) | (1) | 2,137 | 32 | (1) | 31 | 133 | 194 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 7,757 | (1) | 6,504 | 44 | 42 | (1) | 31 | 502 | 64 | (1) | (1) | 109 | 461 |
| Doctorate | 2,314 | (1) | 2,052 | 12 | (1) | (1) | 31 | 38 | 64 | (1) | (1) | (1) | 117 |
| Professional/medical | 70 | (1) | 70 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 2,336 | (1) | 1,847 | 18 | 42 | (1) | (1) | 324 | (1) | (1) | (1) | (1) | 105 |
| Bachelor's | 3,037 | (1) | 2,535 | 14 | (1) | (1) | (1) | 140 | (1) | (1) | (1) | 109 | 239 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Computer specialists | 55,186 | 14 | 17 | 52,454 | 79 | 12 | (1) | 896 | 28 | (1) | (1) | 17 | 1,669 |
| Doctorate | 2,604 | 14 | (1) | 2,470 | (1) | 12 | (1) | 13 | (1) | (1) | (1) | 17 | 78 |
| Professional/medical | 153 | (1) | (1) | 153 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 14,815 | (1) | 17 | 13,817 | 11 | (1) | (1) | 593 | 28 | (1) | (1) | (1) | 349 |
| Bachelor's | 37,614 | (1) | (1) | 36,014 | 68 | (1) | (1) | 290 | (1) | (1) | (1) | (1) | 1,242 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 29,466 | 26,132 | 12 | 71 | 308 | 85 | (1) | 1,471 | 48 | 18 | 24 | 194 | 1,103 |
| Doctorate | 8,054 | 7,208 | (1) | 14 | 51 | 52 | (1) | 296 | 48 | (1) | (1) | 59 | 326 |
| Professional/medical | 62 | 62 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 8,443 | 7,538 | (1) | 26 | 13 | 24 | (1) | 329 | (1) | (1) | 12 | 112 | 389 |
| Bachelor's | 12,907 | 11,324 | 12 | 31 | 244 | 9 | (1) | 846 | (1) | 18 | 12 | 23 | 388 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth scientists | 24,589 | 21,773 | 12 | 28 | 267 | 24 | (1) | 1,285 | 48 | 18 | 24 | 194 | 916 |
| Doctorate | 6,253 | 5,623 | (1) | 14 | 51 | (1) | (1) | 233 | 48 | (1) | (1) | 59 | 225 |
| Professional/medical | 62 | 62 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 6,927 | 6,168 | (1) | 14 | 13 | 24 | (1) | 230 | (1) | (1) | 12 | 112 | 354 |
| Bachelor's | 11,347 | 9,920 | 12 | (1) | 203 | (1) | (1) | 822 | (1) | 18 | 12 | 23 | 337 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | 1,563 | 1,459 | (1) | (1) | (1) | 52 | (1) | 9 | (1) | (1) | (1) | (1) | 43 |
| Doctorate | 957 | 883 | (1) | (1) | (1) | 52 | (1) | (1) | (1) | (1) | (1) | (1) | 22 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 449 | 419 | (1) | (1) | (1) | (1) | (1) | 9 | (1) | (1) | (1) | (1) | 21 |
| Bachelor's | 157 | 157 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

Table B-9—Con.

| Field and highest degree | Total | Physical scientists | Mathematical scientists | Computer specialists | Engineers | Biological scientists | Social scientists | Administrators, managers and officials | Teachers | Health occupations | Technicians and technologists | Other | Not reported |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atmospheric scientists.. | 3,314 | 2,900 | (1) | 43 | 41 | 9 | (1) | 177 | (1) | (1) | (1) | (1) | 144 |
| Doctorate | 844 | 702 | (1) | (1) | (1) | (1) | (1) | 63 | (1) | (1) | (1) | (1) | 79 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,067 | 951 | (1) | 12 | (1) | (1) | (1) | 90 | (1) | (1) | (1) | (1) | 14 |
| Bachelor's | 1,403 | 1,247 | (1) | 31 | 41 | 9 | (1) | 24 | (1) | (1) | (1) | (1) | 51 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineers | 687,911 | 1,232 | 3,084 | 1,550 | 568,908 | 104 | 54 | 76,828 | 398 | 104 | 769 | 2,609 | 32,271 |
| Doctorate | 31,879 | 567 | 629 | 93 | 25,886 | 29 | (1) | 3,388 | 129 | (1) | 13 | 57 | 1,088 |
| Professional/medical | 1,002 | (1) | 29 | (1) | 920 | (1) | (1) | 14 | (1) | (1) | (1) | 14 | 25 |
| Master's | 145,290 | 278 | 1,485 | 455 | 123,037 | 37 | 27 | 14,176 | 183 | 104 | 208 | 316 | 4,984 |
| Bachelor's | 476,845 | 387 | 941 | 1,002 | 388,238 | 38 | 27 | 58,834 | 86 | (1) | 548 | 2,222 | 24,522 |
| Associate | 12,539 | (1) | (1) | (1) | 11,701 | (1) | (1) | 240 | (1) | (1) | (1) | (1) | 598 |
| Other degree | 101 | (1) | (1) | (1) | 101 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | 20,255 | (1) | (1) | (1) | 19,025 | (1) | (1) | 176 | (1) | (1) | (1) | (1) | 1,054 |
| Life scientists | 75,462 | 444 | 43 | (1) | 332 | 63,087 | 80 | 7,798 | 355 | 130 | 95 | 155 | 2,943 |
| Doctorate | 31,765 | 190 | 13 | (1) | 117 | 28,418 | 67 | 1,476 | 342 | 75 | (1) | 22 | 1,045 |
| Professional/medical | 1,416 | (1) | (1) | (1) | (1) | 1,391 | (1) | (1) | (1) | (1) | (1) | (1) | 25 |
| Master's | 16,789 | 88 | 30 | (1) | 106 | 14,387 | 13 | 1,513 | 13 | 14 | 24 | 50 | 551 |
| Bachelor's | 25,492 | 166 | (1) | (1) | 109 | 18,891 | (1) | 4,809 | (1) | 41 | 71 | 83 | 1,322 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Biological scientists | 35,935 | 153 | 13 | (1) | 40 | 31,381 | 41 | 2,888 | 304 | 79 | (1) | 36 | 1,000 |
| Doctorate | 19,981 | 36 | 13 | (1) | 25 | 18,100 | 28 | 906 | 291 | 38 | (1) | 11 | 533 |
| Professional/medical | 153 | (1) | (1) | (1) | (1) | 153 | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 9,187 | 24 | (1) | (1) | (1) | 8,119 | 13 | 819 | 13 | (1) | (1) | 25 | 174 |
| Bachelor's | 6,614 | 93 | (1) | (1) | 15 | 5,009 | (1) | 1,163 | (1) | 41 | (1) | (1) | 293 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 28,790 | 151 | 30 | (1) | 217 | 22,220 | 24 | 4,385 | 13 | (1) | 95 | 106 | 1,549 |
| Doctorate | 6,519 | 14 | (1) | (1) | 65 | 5,700 | 24 | 435 | 13 | (1) | (1) | 11 | 257 |
| Professional/medical | 25 | (1) | (1) | (1) | (1) | 25 | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 5,618 | 64 | 30 | (1) | 58 | 4,693 | (1) | 404 | (1) | (1) | 24 | 12 | 333 |
| Bachelor's | 16,628 | 73 | (1) | (1) | 94 | 11,802 | (1) | 3,546 | (1) | (1) | 71 | 83 | 959 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 10,737 | 140 | (1) | (1) | 75 | 9,486 | 15 | 525 | 38 | 51 | (1) | 13 | 394 |
| Doctorate | 5,265 | 140 | (1) | (1) | 27 | 4,618 | 15 | 135 | 38 | 37 | (1) | (1) | 256 |
| Professional/medical | 1,238 | (1) | (1) | (1) | (1) | 1,213 | (1) | (1) | (1) | (1) | (1) | (1) | 25 |
| Master's | 1,984 | (1) | (1) | (1) | 48 | 1,575 | (1) | 290 | (1) | 14 | (1) | 13 | 44 |
| Bachelor's | 2,250 | (1) | (1) | (1) | (1) | 2,080 | (1) | 100 | (1) | (1) | (1) | (1) | 70 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

Table B-9—Con.

| Field and highest degree | Total | Physical scientists | Mathematical scientists | Computer specialists | Engineers | Biological scientists | Social scientists | Administrators, managers and officials | Teachers | Health occupations | Technicians and technologists | Other | Not reported |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychologists | 34,889 | [1] | [1] | 14 | [1] | 308 | 29,969 | 2,605 | 395 | 84 | 12 | 198 | 1,304 |
| Doctorate | 20,404 | [1] | [1] | 14 | [1] | 261 | 18,179 | 1,025 | 150 | 56 | 12 | 105 | 602 |
| Professional/medical | 53 | [1] | [1] | [1] | [1] | [1] | 40 | [1] | [1] | [1] | [1] | [1] | 13 |
| Master's | 11,034 | [1] | [1] | [1] | [1] | 30 | 10,031 | 238 | 232 | 28 | [1] | 25 | 450 |
| Bachelor's | 3,398 | [1] | [1] | [1] | [1] | 17 | 1,719 | 1,342 | 13 | [1] | [1] | 68 | 239 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Social scientists | 47,940 | 78 | 87 | 26 | 105 | 97 | 37,161 | 7,093 | 564 | 13 | 12 | 410 | 2,294 |
| Doctorate | 21,477 | 78 | 66 | 13 | 17 | 80 | 18,838 | 906 | 457 | 13 | 12 | 82 | 915 |
| Professional/medical | 240 | [1] | [1] | [1] | [1] | [1] | 222 | [1] | [1] | [1] | [1] | [1] | 18 |
| Master's | 14,241 | [1] | 21 | 13 | [1] | 17 | 12,144 | 1,374 | 74 | [1] | [1] | 152 | 446 |
| Bachelor's | 11,982 | [1] | [1] | [1] | 88 | [1] | 5,957 | 4,813 | 33 | [1] | [1] | 176 | 915 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Economists | 19,754 | 17 | 21 | 13 | 75 | 17 | 14,824 | 3,323 | 197 | [1] | 12 | 280 | 975 |
| Doctorate | 8,792 | 17 | [1] | [1] | [1] | [1] | 7,895 | 411 | 145 | [1] | 12 | [1] | 312 |
| Professional/medical | 181 | [1] | [1] | [1] | [1] | [1] | 163 | [1] | [1] | [1] | [1] | [1] | 18 |
| Master's | 5,119 | [1] | 21 | 13 | [1] | 17 | 4,225 | 451 | 19 | [1] | [1] | 122 | 251 |
| Bachelor's | 5,662 | [1] | [1] | [1] | 75 | [1] | 2,541 | 2,461 | 33 | [1] | [1] | 158 | 394 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Sociologists/ anthropologists | 11,158 | 48 | [1] | [1] | [1] | 66 | 9,372 | 1,211 | 89 | [1] | [1] | 15 | 357 |
| Doctorate | 6,470 | 48 | [1] | [1] | [1] | 66 | 5,863 | 213 | 62 | [1] | [1] | 15 | 203 |
| Professional/medical | 14 | [1] | [1] | [1] | [1] | [1] | 14 | [1] | [1] | [1] | [1] | [1] | [1] |
| Master's | 2,937 | [1] | [1] | [1] | [1] | [1] | 2,747 | 93 | 27 | [1] | [1] | [1] | 70 |
| Bachelor's | 1,737 | [1] | [1] | [1] | [1] | [1] | 748 | 905 | [1] | [1] | [1] | [1] | 84 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other social scientists | 17,028 | 13 | 66 | 13 | 30 | 14 | 12,965 | 2,569 | 278 | 13 | [1] | 115 | 962 |
| Doctorate | 6,215 | 13 | 66 | 13 | 17 | 14 | 5,080 | 282 | 250 | 13 | [1] | 67 | 400 |
| Professional/medical | 45 | [1] | [1] | [1] | [1] | [1] | 45 | [1] | [1] | [1] | [1] | [1] | [1] |
| Master's | 6,185 | [1] | [1] | [1] | [1] | [1] | 5,172 | 830 | 28 | [1] | [1] | 30 | 125 |
| Bachelor's | 4,583 | [1] | [1] | [1] | 13 | [1] | 2,668 | 1,447 | [1] | [1] | [1] | 18 | 437 |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

**Table B-10.—Number of scientists and engineers by field, major subject of study for highest degree, and highest degree held: 1974**

| Field and major subject of study for highest degree | Total with a degree | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other |
|---|---|---|---|---|---|---|---|
| Total, all fields | 1,059,443 | 180,870 | 3,248 | 242,289 | 620,396 | 12,539 | 101 |
| Chemistry | 80,798 | 29,958 | (1) | 13,129 | 37,711 | (1) | (1) |
| Physics and astronomy | 49,062 | 20,175 | (1) | 10,857 | 17,981 | 49 | (1) |
| Mathematical sciences | 44,706 | 9,543 | (1) | 12,548 | 22,615 | (1) | (1) |
| Computer science and systems analysis | 6,945 | 776 | (1) | 4,896 | 1,273 | (1) | (1) |
| Earth, space, and marine sciences | 26,128 | 6,466 | (1) | 7,884 | 11,778 | (1) | (1) |
| Engineering | 592,420 | 30,091 | 70 | 123,056 | 437,861 | 1,342 | (1) |
| Biological sciences | 49,969 | 29,443 | (1) | 10,293 | 10,233 | (1) | (1) |
| Agricultural sciences | 30,500 | 5,760 | (1) | 5,886 | 18,854 | (1) | (1) |
| Medical sciences | 6,175 | 1,883 | 1,146 | 1,542 | 1,604 | (1) | (1) |
| Psychology | 36,083 | 20,146 | 13 | 10,673 | 5,251 | (1) | (1) |
| Economics | 22,095 | 8,695 | (1) | 5,309 | 8,091 | (1) | (1) |
| Sociology and anthropology | 11,922 | 6,492 | 14 | 2,666 | 2,750 | (1) | (1) |
| Other social sciences | 15,337 | 5,586 | (1) | 4,236 | 5,477 | 38 | (1) |
| Business and commerce | 30,549 | 331 | (1) | 13,949 | 16,156 | 113 | (1) |
| All other subjects | 47,100 | 4,056 | 1,405 | 13,382 | 17,380 | 10,838 | 39 |
| Subject not reported | 9,654 | 1,469 | 600 | 1,963 | 5,381 | 159 | 62 |
| Physical scientists | 121,011 | 54,665 | 175 | 22,349 | 43,822 | (1) | (1) |
| Chemistry | 70,734 | 28,375 | (1) | 11,550 | 30,809 | (1) | (1) |
| Physics and astronomy | 29,531 | 17,175 | (1) | 6,512 | 5,844 | (1) | (1) |
| Mathematical sciences | 728 | 12 | (1) | 76 | 640 | (1) | (1) |
| Computer science and systems analysis | 73 | (1) | (1) | 23 | 50 | (1) | (1) |
| Earth, space, and marine sciences | 650 | 132 | (1) | 263 | 255 | (1) | (1) |
| Engineering | 3,609 | 1,303 | (1) | 523 | 1,783 | (1) | (1) |
| Biological sciences | 10,088 | 6,389 | (1) | 1,502 | 2,197 | (1) | (1) |
| Agricultural sciences | 832 | 261 | (1) | 159 | 412 | (1) | (1) |
| Medical sciences | 681 | 177 | 75 | 148 | 281 | (1) | (1) |
| Psychology | 84 | 12 | (1) | 23 | 49 | (1) | (1) |
| Economics | 41 | (1) | (1) | 18 | 23 | (1) | (1) |
| Sociology and anthropology | 45 | (1) | (1) | 12 | 33 | (1) | (1) |
| Other social sciences | 338 | 69 | (1) | 80 | 189 | (1) | (1) |
| Business and commerce | 498 | (1) | (1) | 473 | 25 | (1) | (1) |
| All other subjects | 2,152 | 442 | 76 | 826 | 808 | (1) | (1) |
| Subject not reported | 927 | 318 | 24 | 161 | 424 | (1) | (1) |
| Chemists | 87,334 | 35,897 | 175 | 14,743 | 36,519 | (1) | (1) |
| Chemistry | 69,910 | 28,028 | (1) | 11,436 | 30,446 | (1) | (1) |
| Physics and astronomy | 911 | 367 | (1) | 167 | 377 | (1) | (1) |
| Mathematical sciences | 337 | (1) | (1) | (1) | 337 | (1) | (1) |
| Computer science and systems analysis | 50 | (1) | (1) | (1) | 50 | (1) | (1) |
| Earth, space, and marine sciences | 180 | 47 | (1) | 51 | 82 | (1) | (1) |
| Engineering | 1,989 | 353 | (1) | 244 | 1,392 | (1) | (1) |
| Biological sciences | 9,898 | 6,324 | (1) | 1,440 | 2,134 | (1) | (1) |
| Agricultural sciences | 621 | 249 | (1) | 130 | 242 | (1) | (1) |
| Medical sciences | 646 | 154 | 75 | 136 | 281 | (1) | (1) |
| Psychology | 72 | (1) | (1) | 23 | 49 | (1) | (1) |
| Economics | 23 | (1) | (1) | (1) | 23 | (1) | (1) |
| Sociology and anthropology | 24 | (1) | (1) | (1) | 24 | (1) | (1) |
| Other social sciences | 54 | (1) | (1) | (1) | 54 | (1) | (1) |
| Business and commerce | 447 | (1) | (1) | 422 | 25 | (1) | (1) |
| All other subjects | 1,581 | 202 | 76 | 594 | 709 | (1) | (1) |
| Subject not reported | 591 | 173 | 24 | 100 | 294 | (1) | (1) |
| Physicists/ astronomers | 27,519 | 16,874 | (1) | 5,860 | 4,785 | (1) | (1) |
| Chemistry | 212 | 134 | (1) | 12 | 66 | (1) | (1) |
| Physics and astronomy | 25,528 | 15,969 | (1) | 5,225 | 4,314 | (1) | (1) |
| Mathematical sciences | 173 | 12 | (1) | 63 | 98 | (1) | (1) |
| Computer science and systems analysis | 23 | (1) | (1) | 23 | (1) | (1) | (1) |
| Earth, space, and marine sciences | 164 | 24 | (1) | 140 | (1) | (1) | (1) |
| Engineering | 564 | 342 | (1) | 133 | 89 | (1) | (1) |

Table B-10—Con.

| Field and major subject of study for highest degree | Total with a degree | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other |
|---|---|---|---|---|---|---|---|
| Biological sciences | 39 | 13 | (1) | 11 | 15 | (1) | (1) |
| Agricultural sciences | 12 | 12 | (1) | (1) | (1) | (1) | (1) |
| Medical sciences | 35 | 23 | (1) | 12 | (1) | (1) | (1) |
| Psychology | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Economics | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Sociology and anthropology | 12 | (1) | (1) | 12 | (1) | (1) | (1) |
| Other social sciences | 25 | 12 | (1) | 13 | (1) | (1) | (1) |
| Business and commerce | 25 | (1) | (1) | 25 | (1) | (1) | (1) |
| All other subjects | 397 | 168 | (1) | 143 | 86 | (1) | (1) |
| Subject not reported | 310 | 145 | (1) | 48 | 117 | (1) | (1) |
| Other physical scientists | 6,158 | 1,894 | (1) | 1,746 | 2,518 | (1) | (1) |
| Chemistry | 612 | 213 | (1) | 102 | 297 | (1) | (1) |
| Physics and astronomy | 3,092 | 819 | (1) | 1,120 | 1,153 | (1) | (1) |
| Mathematical sciences | 218 | (1) | (1) | 13 | 205 | (1) | (1) |
| Computer science and systems analysis | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth, space, and marine sciences | 306 | 61 | (1) | 72 | 173 | (1) | (1) |
| Engineering | 1,056 | 608 | (1) | 146 | 302 | (1) | (1) |
| Biological sciences | 151 | 52 | (1) | 51 | 48 | (1) | (1) |
| Agricultural sciences | 199 | (1) | (1) | 29 | 170 | (1) | (1) |
| Medical sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Psychology | 12 | 12 | (1) | (1) | (1) | (1) | (1) |
| Economics | 18 | (1) | (1) | 18 | (1) | (1) | (1) |
| Sociology and anthropology | 9 | (1) | (1) | (1) | 9 | (1) | (1) |
| Other social sciences | 259 | 57 | (1) | 67 | 135 | (1) | (1) |
| Business and commerce | 26 | (1) | (1) | 26 | (1) | (1) | (1) |
| All other subjects | 174 | 72 | (1) | 89 | 13 | (1) | (1) |
| Subject not reported | 26 | (1) | (1) | 13 | 13 | (1) | (1) |
| Mathematical scientists | 27,833 | 10,022 | 147 | 9,328 | 8,336 | (1) | (1) |
| Chemistry | 78 | 39 | (1) | 12 | 27 | (1) | (1) |
| Physics and astronomy | 408 | 213 | (1) | 131 | 64 | (1) | (1) |
| Mathematical sciences | 22,176 | 8,638 | (1) | 7,742 | 5,796 | (1) | (1) |
| Computer science and systems analysis | 122 | 25 | (1) | 97 | (1) | (1) | (1) |
| Earth, space, and marine sciences | 31 | (1) | (1) | 31 | (1) | (1) | (1) |
| Engineering | 481 | 88 | (1) | 224 | 169 | (1) | (1) |
| Biological sciences | 194 | 96 | (1) | (1) | 98 | (1) | (1) |
| Agricultural sciences | 354 | 78 | (1) | 72 | 204 | (1) | (1) |
| Medical sciences | 152 | 13 | 58 | 52 | 29 | (1) | (1) |
| Psychology | 216 | 47 | (1) | 24 | 145 | (1) | (1) |
| Economics | 829 | 146 | (1) | 233 | 450 | (1) | (1) |
| Sociology and anthropology | 265 | 96 | (1) | 29 | 140 | (1) | (1) |
| Other social sciences | 133 | (1) | (1) | 25 | 108 | (1) | (1) |
| Business and commerce | 802 | 12 | (1) | 239 | 551 | (1) | (1) |
| All other subjects | 1,445 | 518 | 25 | 417 | 485 | (1) | (1) |
| Subject not reported | 147 | 13 | 64 | (1) | 70 | (1) | (1) |
| Mathematicians | 20,076 | 7,708 | 77 | 6,992 | 5,299 | (1) | (1) |
| Chemistry | 14 | (1) | (1) | (1) | 14 | (1) | (1) |
| Physics and astronomy | 396 | 201 | (1) | 131 | 64 | (1) | (1) |
| Mathematical sciences | 18,281 | 7,010 | (1) | 6,314 | 4,957 | (1) | (1) |
| Computer science and systems analysis | 96 | 25 | (1) | 71 | (1) | (1) | (1) |
| Earth, space, and marine sciences | 31 | (1) | (1) | 31 | (1) | (1) | (1) |
| Engineering | 269 | 88 | (1) | 145 | 36 | (1) | (1) |
| Biological sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural sciences | 16 | (1) | (1) | (1) | 16 | (1) | (1) |
| Medical sciences | 27 | (1) | (1) | 27 | (1) | (1) | (1) |
| Psychology | 18 | (1) | (1) | (1) | 18 | (1) | (1) |
| Economics | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Sociology and anthropology | 36 | (1) | (1) | (1) | 36 | (1) | (1) |
| Other social sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

63

See footnote at end of table.

Table B-10—Con.

| Field and major subject of study for highest degree | Total with a degree | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other |
|---|---|---|---|---|---|---|---|
| Business and commerce | 30 | (1) | (1) | 13 | 17 | (1) | (1) |
| All other subjects | 785 | 371 | 13 | 260 | 141 | (1) | (1) |
| Subject not reported | 77 | 13 | 64 | (1) | (1) | (1) | (1) |
| Statisticians | 7,757 | 2,314 | 70 | 2,336 | 3,037 | (1) | (1) |
| Chemistry | 64 | 39 | (1) | 12 | 13 | (1) | (1) |
| Physics and astronomy | 12 | 12 | (1) | (1) | (1) | (1) | (1) |
| Mathematical sciences | 3,895 | 1,628 | (1) | 1,428 | 839 | (1) | (1) |
| Computer science and systems analysis | 26 | (1) | (1) | 26 | (1) | (1) | (1) |
| Earth, space, and marine sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineering | 212 | (1) | (1) | 79 | 133 | (1) | (1) |
| Biological sciences | 194 | 96 | (1) | (1) | 98 | (1) | (1) |
| Agricultural sciences | 338 | 78 | (1) | 72 | 188 | (1) | (1) |
| Medical sciences | 125 | 13 | 58 | 25 | 29 | (1) | (1) |
| Psychology | 198 | 47 | (1) | 24 | 127 | (1) | (1) |
| Economics | 829 | 146 | (1) | 233 | 450 | (1) | (1) |
| Sociology and anthropology | 229 | 96 | (1) | 29 | 104 | (1) | (1) |
| Other social sciences | 133 | (1) | (1) | 25 | 108 | (1) | (1) |
| Business and commerce | 772 | 12 | (1) | 226 | 534 | (1) | (1) |
| All other subjects | 660 | 147 | 12 | 157 | 344 | (1) | (1) |
| Subject not reported | 70 | (1) | (1) | (1) | 70 | (1) | (1) |
| Computer specialists | 55,186 | 2,604 | 153 | 14,815 | 37,614 | (1) | (1) |
| Chemistry | 693 | 184 | (1) | 17 | 492 | (1) | (1) |
| Physics and astronomy | 2,355 | 371 | (1) | 230 | 1,754 | (1) | (1) |
| Mathematical sciences | 13,964 | 302 | (1) | 2,794 | 10,868 | (1) | (1) |
| Computer science and systems analysis | 5,595 | 599 | (1) | 3,923 | 1,073 | (1) | (1) |
| Earth, space, and marine sciences | 548 | 87 | (1) | 65 | 394 | (1) | (1) |
| Engineering | 9,266 | 610 | (1) | 2,565 | 6,091 | (1) | (1) |
| Biological sciences | 597 | (1) | (1) | 57 | 540 | (1) | (1) |
| Agricultural sciences | 192 | (1) | (1) | 53 | 139 | (1) | (1) |
| Medical sciences | 428 | 137 | (1) | 124 | 167 | (1) | (1) |
| Psychology | 1,140 | 61 | (1) | 165 | 914 | (1) | (1) |
| Economics | 1,924 | (1) | (1) | 274 | 1,650 | (1) | (1) |
| Sociology and anthropology | 449 | (1) | (1) | 73 | 376 | (1) | (1) |
| Other social sciences | 1,253 | 54 | (1) | 210 | 989 | (1) | (1) |
| Business and commerce | 10,960 | 48 | (1) | 3,020 | 7,892 | (1) | (1) |
| All other subjects | 5,398 | 80 | 153 | 1,161 | 4,004 | (1) | (1) |
| Subject not reported | 426 | 71 | (1) | 84 | 271 | (1) | (1) |
| Environmental scientists | 29,466 | 8,054 | 62 | 8,443 | 12,907 | (1) | (1) |
| Chemistry | 264 | 151 | (1) | (1) | 113 | (1) | (1) |
| Physics and astronomy | 1,696 | 655 | (1) | 306 | 735 | (1) | (1) |
| Mathematical sciences | 555 | 32 | (1) | 24 | 499 | (1) | (1) |
| Computer science and systems analysis | 13 | (1) | (1) | (1) | 13 | (1) | (1) |
| Earth, space, and marine sciences | 22,594 | 6,030 | (1) | 7,111 | 9,453 | (1) | (1) |
| Engineering | 1,535 | 338 | (1) | 180 | 1,017 | (1) | (1) |
| Biological sciences | 256 | 150 | (1) | 70 | 36 | (1) | (1) |
| Agricultural sciences | 785 | 153 | (1) | 179 | 453 | (1) | (1) |
| Medical sciences | 37 | (1) | 13 | (1) | 24 | (1) | (1) |
| Psychology | 25 | (1) | (1) | (1) | 25 | (1) | (1) |
| Economics | 104 | 64 | (1) | 16 | 24 | (1) | (1) |
| Sociology and anthropology | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other social sciences | 715 | 296 | (1) | 245 | 174 | (1) | (1) |
| Business and commerce | 62 | (1) | (1) | 50 | 12 | (1) | (1) |
| All other subjects | 471 | 46 | 36 | 159 | 230 | (1) | (1) |
| Subject not reported | 354 | 139 | 13 | 103 | 99 | (1) | (1) |
| Earth scientists | 24,589 | 6,253 | 62 | 6,927 | 11,347 | (1) | (1) |
| Chemistry | 113 | 62 | (1) | (1) | 51 | (1) | (1) |
| Physics and astronomy | 1,151 | 414 | (1) | 219 | 518 | (1) | (1) |
| Mathematical sciences | 338 | 21 | (1) | (1) | 317 | (1) | (1) |
| Computer science and systems analysis | 13 | (1) | (1) | (1) | 13 | (1) | (1) |

Table B-10—Con.

| Field and major subject of study for highest degree | Total with a degree | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other |
|---|---|---|---|---|---|---|---|
| Earth, space, and marine sciences | 19,555 | 4,778 | (1) | 6,025 | 8,752 | (1) | (1) |
| Engineering | 1,175 | 254 | (1) | 76 | 845 | (1) | (1) |
| Biological sciences | 148 | 113 | (1) | 12 | 23 | (1) | (1) |
| Agricultural sciences | 716 | 142 | (1) | 121 | 453 | (1) | (1) |
| Medical sciences | 13 | (1) | 13 | (1) | (1) | (1) | (1) |
| Psychology | 12 | (1) | (1) | (1) | 12 | (1) | (1) |
| Economics | 104 | 64 | (1) | 16 | 24 | (1) | (1) |
| Sociology and anthropology | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other social sciences | 601 | 244 | (1) | 232 | 125 | (1) | (1) |
| Business and commerce | 38 | (1) | (1) | 38 | (1) | (1) | (1) |
| All other subjects | 283 | 35 | 38 | 85 | 127 | (1) | (1) |
| Subject not reported | 329 | 126 | 13 | 103 | 87 | (1) | (1) |
| Oceanographers | 1,563 | 957 | (1) | 449 | 157 | (1) | (1) |
| Chemistry | 37 | 24 | (1) | (1) | 13 | (1) | (1) |
| Physics and astronomy | 50 | 38 | (1) | 12 | (1) | (1) | (1) |
| Mathematical sciences | 11 | 11 | (1) | (1) | (1) | (1) | (1) |
| Computer science and systems analysis | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth, space, and marine sciences | 1,034 | 787 | (1) | 186 | 61 | (1) | (1) |
| Engineering | 145 | 47 | (1) | 65 | 33 | (1) | (1) |
| Biological sciences | 108 | 37 | (1) | 58 | 13 | (1) | (1) |
| Agricultural sciences | 58 | (1) | (1) | 58 | (1) | (1) | (1) |
| Medical sciences | 24 | (1) | (1) | (1) | 24 | (1) | (1) |
| Psychology | 13 | (1) | (1) | (1) | 13 | (1) | (1) |
| Economics | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Sociology and anthropology | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other social sciences | 13 | (1) | (1) | 13 | (1) | (1) | (1) |
| Business and commerce | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| All other subjects | 57 | (1) | (1) | 57 | (1) | (1) | (1) |
| Subject not reported | 13 | 13 | (1) | (1) | (1) | (1) | (1) |
| Atmospheric scientists | 3,314 | 844 | (1) | 1,067 | 1,403 | (1) | (1) |
| Chemistry | 114 | 65 | (1) | (1) | 49 | (1) | (1) |
| Physics and astronomy | 495 | 203 | (1) | 75 | 217 | (1) | (1) |
| Mathematical sciences | 206 | (1) | (1) | 24 | 182 | (1) | (1) |
| Computer science and systems analysis | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth, space, and marine sciences | 2,005 | 465 | (1) | 900 | 640 | (1) | (1) |
| Engineering | 215 | 37 | (1) | 39 | 139 | (1) | (1) |
| Biological sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural sciences | 11 | 11 | (1) | (1) | (1) | (1) | (1) |
| Medical sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Psychology | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Economics | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Sociology and anthropology | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other social sciences | 101 | 52 | (1) | (1) | 49 | (1) | (1) |
| Business and commerce | 24 | (1) | (1) | 12 | 12 | (1) | (1) |
| All other subjects | 131 | 11 | (1) | 17 | 103 | (1) | (1) |
| Subject not reported | 12 | (1) | (1) | (1) | 12 | (1) | (1) |
| Engineers | 667,656 | 31,879 | 1,002 | 145,290 | 476,845 | 12,539 | 101 |
| Chemistry | 7,978 | 653 | (1) | 1,333 | 5,992 | (1) | (1) |
| Physics and astronomy | 14,506 | 1,374 | (1) | 3,580 | 9,503 | 49 | (1) |
| Mathematical sciences | 6,758 | 392 | (1) | 1,832 | 4,534 | (1) | (1) |
| Computer science and systems analysis | 1,109 | 152 | (1) | 832 | 125 | (1) | (1) |
| Earth, space, and marine sciences | 2,161 | 94 | (1) | 402 | 1,666 | (1) | (1) |
| Engineering | 576,789 | 27,462 | 70 | 119,352 | 428,563 | 1,342 | (1) |
| Biological sciences | 1,407 | 178 | (1) | 275 | 954 | (1) | (1) |
| Agricultural sciences | 1,711 | 74 | (1) | 232 | 1,405 | (1) | (1) |
| Medical sciences | 795 | 58 | 12 | 340 | 385 | (1) | (1) |

See footnote at end of table.

Table B-10—Con.

| Field and major subject of study for highest degree | Total with a degree | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other |
|---|---|---|---|---|---|---|---|
| Psychology | 948 | 213 | (1) | 205 | 530 | (1) | (1) |
| Economics | 1,581 | 123 | (1) | 417 | 1,041 | (1) | (1) |
| Sociology and anthropology | 208 | 36 | (1) | 46 | 126 | (1) | (1) |
| Other social sciences | 2,111 | 86 | (1) | 852 | 1,135 | 38 | (1) |
| Business and commerce | 17,307 | 148 | (1) | 9,769 | 7,277 | 113 | (1) |
| All other subjects | 25,771 | 376 | 826 | 4,347 | 9,345 | 10,838 | 39 |
| Subject not reported | 6,516 | 460 | 94 | 1,476 | 4,265 | 159 | 62 |
| Life scientists | 75,462 | 31,765 | 1,416 | 16,789 | 25,492 | (1) | (1) |
| Chemistry | 1,026 | 556 | (1) | 217 | 253 | (1) | (1) |
| Physics and astronomy | 510 | 387 | (1) | 84 | 39 | (1) | (1) |
| Mathematical sciences | 292 | 93 | (1) | 50 | 149 | (1) | (1) |
| Computer science and systems analysis | 12 | (1) | (1) | (1) | 12 | (1) | (1) |
| Earth, space, and marine sciences | 129 | 106 | (1) | 12 | 11 | (1) | (1) |
| Engineering | 522 | 228 | (1) | 120 | 174 | (1) | (1) |
| Biological sciences | 37,226 | 22,493 | (1) | 8,351 | 6,382 | (1) | (1) |
| Agricultural sciences | 26,417 | 5,152 | (1) | 5,091 | 16,174 | (1) | (1) |
| Medical sciences | 3,957 | 1,423 | 988 | 840 | 706 | (1) | (1) |
| Psychology | 574 | 371 | (1) | 93 | 110 | (1) | (1) |
| Economics | 169 | 17 | (1) | 85 | 67 | (1) | (1) |
| Sociology and anthropology | 156 | 43 | (1) | 24 | 89 | (1) | (1) |
| Other social sciences | 189 | 14 | (1) | 104 | 71 | (1) | (1) |
| Business and commerce | 98 | (1) | (1) | 48 | 50 | (1) | (1) |
| All other subjects | 3,397 | 727 | 36 | 1,598 | 1,036 | (1) | (1) |
| Subject not reported | 788 | 155 | 392 | 72 | 169 | (1) | (1) |
| Biological scientists | 35,935 | 19,981 | 153 | 9,187 | 6,614 | (1) | (1) |
| Chemistry | 564 | 320 | (1) | 115 | 129 | (1) | (1) |
| Physics and astronomy | 250 | 175 | (1) | 48 | 27 | (1) | (1) |
| Mathematical sciences | 48 | 32 | (1) | (1) | 16 | (1) | (1) |
| Computer science and systems analysis | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth, space, and marine sciences | 118 | 106 | (1) | 12 | (1) | (1) | (1) |
| Engineering | 190 | 76 | (1) | 87 | 27 | (1) | (1) |
| Biological sciences | 29,361 | 17,400 | (1) | 7,114 | 4,847 | (1) | (1) |
| Agricultural sciences | 2,646 | 953 | (1) | 803 | 890 | (1) | (1) |
| Medical sciences | 466 | 246 | 49 | 39 | 132 | (1) | (1) |
| Psychology | 139 | 114 | (1) | 13 | 12 | (1) | (1) |
| Economics | 12 | (1) | (1) | (1) | 12 | (1) | (1) |
| Sociology and anthropology | 23 | (1) | (1) | 11 | 12 | (1) | (1) |
| Other social sciences | 13 | (1) | (1) | (1) | 13 | (1) | (1) |
| Business and commerce | 64 | (1) | (1) | 25 | 39 | (1) | (1) |
| All other subjects | 1,822 | 503 | 24 | 848 | 447 | (1) | (1) |
| Subject not reported | 219 | 56 | 80 | 72 | 11 | (1) | (1) |
| Agricultural scientists | 28,790 | 6,519 | 25 | 5,618 | 16,628 | (1) | (1) |
| Chemistry | 43 | (1) | (1) | 30 | 13 | (1) | (1) |
| Physics and astronomy | 26 | 14 | (1) | 12 | (1) | (1) | (1) |
| Mathematical sciences | 132 | (1) | (1) | 13 | 119 | (1) | (1) |
| Computer science and systems analysis | 12 | (1) | (1) | (1) | 12 | (1) | (1) |
| Earth, space, and marine sciences | 11 | (1) | (1) | (1) | 11 | (1) | (1) |
| Engineering | 147 | (1) | (1) | (1) | 147 | (1) | (1) |
| Biological sciences | 3,821 | 2,331 | (1) | 892 | 598 | (1) | (1) |
| Agricultural sciences | 23,594 | 4,022 | (1) | 4,288 | 15,284 | (1) | (1) |
| Medical sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Psychology | 12 | (1) | (1) | 12 | (1) | (1) | (1) |
| Economics | 157 | 17 | (1) | 85 | 55 | (1) | (1) |
| Sociology and anthropology | 36 | (1) | (1) | (1) | 36 | (1) | (1) |
| Other social sciences | 99 | 14 | (1) | 59 | 26 | (1) | (1) |
| Business and commerce | 34 | (1) | (1) | 23 | 11 | (1) | (1) |
| All other subjects | 565 | 82 | 12 | 204 | 267 | (1) | (1) |
| Subject not reported | 101 | 39 | 13 | (1) | 49 | (1) | (1) |

Table B-10—Con.

| Field and major subject of study for highest degree | Total with a degree | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other |
|---|---|---|---|---|---|---|---|
| Medical scientists | 10,737 | 5,265 | 1,238 | 1,984 | 2,250 | (1) | (1) |
| Chemistry | 419 | 236 | (1) | 72 | 111 | (1) | (1) |
| Physics and astronomy | 234 | 198 | (1) | 24 | 12 | (1) | (1) |
| Mathematical sciences | 112 | 61 | (1) | 37 | 14 | (1) | (1) |
| Computer science and systems analysis | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth, space, and marine sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineering | 185 | 152 | (1) | 33 | (1) | (1) | (1) |
| Biological sciences | 4,044 | 2,762 | (1) | 345 | 937 | (1) | (1) |
| Agricultural sciences | 177 | 177 | (1) | (1) | (1) | (1) | (1) |
| Medical sciences | 3,491 | 1,177 | 939 | 801 | 574 | (1) | (1) |
| Psychology | 423 | 257 | (1) | 68 | 98 | (1) | (1) |
| Economics | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Sociology and anthropology | 97 | 43 | (1) | 13 | 41 | (1) | (1) |
| Other social sciences | 77 | (1) | (1) | 45 | 32 | (1) | (1) |
| Business and commerce | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| All other subjects | 1,010 | 142 | (1) | 546 | 322 | (1) | (1) |
| Subject not reported | 468 | 60 | 299 | (1) | 109 | (1) | (1) |
| Psychologists | 34,889 | 20,404 | 53 | 11,034 | 3,398 | (1) | (1) |
| Chemistry | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Physics and astronomy | 14 | (1) | (1) | (1) | 14 | (1) | (1) |
| Mathematical sciences | 31 | (1) | (1) | 15 | 16 | (1) | (1) |
| Computer science and systems analysis | 21 | (1) | (1) | 21 | (1) | (1) | (1) |
| Earth, space, and marine sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineering | 14 | (1) | (1) | (1) | 14 | (1) | (1) |
| Biological sciences | 174 | 122 | (1) | 38 | 14 | (1) | (1) |
| Agricultural sciences | 12 | 12 | (1) | (1) | (1) | (1) | (1) |
| Medical sciences | 51 | 38 | (1) | 13 | (1) | (1) | (1) |
| Psychology | 32,141 | 18,112 | 13 | 9,925 | 3,091 | (1) | (1) |
| Economics | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Sociology and anthropology | 38 | 25 | (1) | 13 | (1) | (1) | (1) |
| Other social sciences | 224 | 140 | (1) | 71 | 13 | (1) | (1) |
| Business and commerce | 91 | 52 | (1) | 26 | 13 | (1) | (1) |
| All other subjects | 1,868 | 760 | 27 | 858 | 223 | (1) | (1) |
| Subject not reported | 210 | 143 | 13 | 54 | (1) | (1) | (1) |
| Social scientists | 47,940 | 21,477 | 240 | 14,241 | 11,982 | (1) | (1) |
| Chemistry | 25 | (1) | (1) | (1) | 25 | (1) | (1) |
| Physics and astronomy | 42 | (1) | (1) | 14 | 28 | (1) | (1) |
| Mathematical sciences | 202 | 74 | (1) | 15 | 113 | (1) | (1) |
| Computer science and systems analysis | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth, space, and marine sciences | 17 | 17 | (1) | (1) | (1) | (1) | (1) |
| Engineering | 204 | 62 | (1) | 92 | 50 | (1) | (1) |
| Biological sciences | 27 | 15 | (1) | (1) | 12 | (1) | (1) |
| Agricultural sciences | 197 | 30 | (1) | 100 | 67 | (1) | (1) |
| Medical sciences | 74 | 37 | (1) | 25 | 12 | (1) | (1) |
| Psychology | 955 | 330 | (1) | 238 | 387 | (1) | (1) |
| Economics | 17,447 | 8,345 | (1) | 4,266 | 4,836 | (1) | (1) |
| Sociology and anthropology | 10,761 | 6,292 | 14 | 2,469 | 1,986 | (1) | (1) |
| Other social sciences | 10,374 | 4,927 | (1) | 2,649 | 2,798 | (1) | (1) |
| Business and commerce | 731 | 71 | (1) | 324 | 336 | (1) | (1) |
| All other subjects | 6,598 | 1,107 | 226 | 4,016 | 1,249 | (1) | (1) |
| Subject not reported | 286 | 170 | (1) | 33 | 83 | (1) | (1) |
| Economists | 19,754 | 8,792 | 181 | 5,119 | 5,662 | (1) | (1) |
| Chemistry | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Physics and astronomy | 14 | (1) | (1) | 14 | (1) | (1) | (1) |
| Mathematical sciences | 89 | 74 | (1) | 15 | (1) | (1) | (1) |
| Computer science and systems analysis | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth, space, and marine sciences | 17 | 17 | (1) | (1) | (1) | (1) | (1) |
| Engineering | 95 | 15 | (1) | 65 | 15 | (1) | (1) |
| Biological sciences | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

Table B-10—Con.

| Field and major subject of study for highest degree | Total with a degree | Doctorate | Professional/ medical | Master's | Bachelor's | Associate | Other |
|---|---|---|---|---|---|---|---|
| Agricultural sciences | 171 | 30 | [1] | 100 | 41 | [1] | [1] |
| Medical sciences | 24 | 24 | [1] | [1] | [1] | [1] | [1] |
| Psychology | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Economics | 16,886 | 8,128 | [1] | 4,095 | 4,663 | [1] | [1] |
| Sociology and anthropology | 102 | 24 | [1] | 16 | 62 | [1] | [1] |
| Other social sciences | 903 | 344 | [1] | 288 | 271 | [1] | [1] |
| Business and commerce | 682 | 71 | [1] | 292 | 319 | [1] | [1] |
| All other subjects | 622 | 16 | 181 | 217 | 208 | [1] | [1] |
| Subject not reported | 149 | 49 | [1] | 17 | 83 | [1] | [1] |
| Sociologist/ anthropologists | 11,158 | 6,470 | 14 | 2,937 | 1,737 | [1] | [1] |
| Chemistry | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Physics and astronomy | 15 | [1] | [1] | [1] | 15 | [1] | [1] |
| Mathematical sciences | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Computer science and systems analysis | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Earth, space, and marine sciences | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Engineering | 12 | [1] | [1] | [1] | 12 | [1] | [1] |
| Biological sciences | 15 | 15 | [1] | [1] | [1] | [1] | [1] |
| Agricultural sciences | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Medical sciences | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Psychology | 12 | 12 | [1] | [1] | [1] | [1] | [1] |
| Economics | 11 | 11 | [1] | [1] | [1] | [1] | [1] |
| Sociology and anthropology | 10,023 | 6,025 | 14 | 2,412 | 1,572 | [1] | [1] |
| Other social sciences | 250 | 164 | [1] | 86 | [1] | [1] | [1] |
| Business and commerce | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| All other subjects | 750 | 173 | [1] | 439 | 138 | [1] | [1] |
| Subject not reported | 70 | 70 | [1] | [1] | [1] | [1] | [1] |
| Other social scientists | 17,028 | 6,215 | 45 | 6,185 | 4,583 | [1] | [1] |
| Chemistry | 25 | [1] | [1] | [1] | 25 | [1] | [1] |
| Physics and astronomy | 13 | [1] | [1] | [1] | 13 | [1] | [1] |
| Mathematical sciences | 113 | [1] | [1] | [1] | 113 | [1] | [1] |
| Computer science and systems analysis | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Earth, space, and marine sciences | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Engineering | 97 | 47 | [1] | 27 | 23 | [1] | [1] |
| Biological sciences | 12 | [1] | [1] | [1] | 12 | [1] | [1] |
| Agricultural sciences | 26 | [1] | [1] | [1] | 26 | [1] | [1] |
| Medical sciences | 50 | 13 | [1] | 25 | 12 | [1] | [1] |
| Psychology | 943 | 318 | [1] | 238 | 387 | [1] | [1] |
| Economics | 550 | 206 | [1] | 171 | 173 | [1] | [1] |
| Sociology and anthropology | 636 | 243 | [1] | 41 | 352 | [1] | [1] |
| Other social sciences | 9,221 | 4,419 | [1] | 2,275 | 2,527 | [1] | [1] |
| Business and commerce | 49 | [1] | [1] | 32 | 17 | [1] | [1] |
| All other subjects | 5,226 | 918 | 45 | 3,360 | 903 | [1] | [1] |
| Subject not reported | 67 | 51 | [1] | 16 | [1] | [1] | [1] |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

## Table B-11.—Number of women scientists and engineers by field, race, and age: 1974

| Field and race | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total, all fields | 53,957 | 73 | 13,582 | 11,457 | 6,924 | 5,755 | 4,635 | 4,478 | 2,803 | 2,426 | 1,304 | 520 |
| White/ Caucasian ... | 50,037 | 73 | 12,830 | 10,418 | 6,242 | 4,998 | 4,423 | 4,235 | 2,748 | 2,273 | 1,292 | 505 |
| Black/Negro . | 1,714 | (1) | 338 | 370 | 243 | 352 | 129 | 95 | 41 | 119 | 12 | 15 |
| American Indian ..... | 45 | (1) | (1) | 13 | (1) | 18 | (1) | 14 | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 1,422 | (1) | 178 | 433 | 312 | 276 | 69 | 120 | (1) | 34 | (1) | (1) |
| Other races | 739 | (1) | 236 | 223 | 127 | 111 | 14 | 14 | 14 | (1) | (1) | (1) |
| Physical scientists..... | 9,075 | 11 | 2,195 | 1,979 | 1,454 | 953 | 881 | 793 | 304 | 337 | 136 | 32 |
| White/ Caucasian ... | 7,820 | 11 | 1,910 | 1,546 | 1,153 | 828 | 831 | 766 | 304 | 303 | 136 | 32 |
| Black/Negro . | 282 | (1) | 51 | 164 | 51 | (1) | 16 | (1) | (1) | (1) | (1) | (1) |
| American Indian ..... | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 548 | (1) | 70 | 112 | 215 | 56 | 34 | 27 | (1) | 34 | (1) | (1) |
| Other races . | 425 | (1) | 164 | 157 | 35 | 69 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chemists ..... | 8,103 | (1) | 2,088 | 1,825 | 1,198 | 816 | 789 | 705 | 255 | 275 | 136 | 16 |
| White/ Caucasian ... | 6,952 | (1) | 1,854 | 1,392 | 913 | 712 | 755 | 678 | 255 | 241 | 136 | 16 |
| Black/Negro . | 199 | (1) | (1) | 164 | 35 | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian ..... | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 527 | (1) | 70 | 112 | 215 | 35 | 34 | 27 | (1) | 34 | (1) | (1) |
| Other races .. | 425 | (1) | 164 | 157 | 35 | 69 | (1) | (1) | (1) | (1) | (1) | (1) |
| Physicists/ astronomers .. | 735 | (1) | 45 | 87 | 189 | 137 | 62 | 88 | 49 | 62 | (1) | 16 |
| White/ Caucasian ... | 682 | (1) | 29 | 87 | 189 | 116 | 46 | 88 | 49 | 62 | (1) | 16 |
| Black/Negro . | 32 | (1) | 16 | (1) | (1) | (1) | 16 | (1) | (1) | (1) | (1) | (1) |
| American Indian ..... | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 21 | (1) | (1) | (1) | (1) | 21 | (1) | (1) | (1) | (1) | (1) | (1) |
| Other races .. | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other physical scientists ..... | 237 | 11 | 62 | 67 | 67 | (1) | 30 | (1) | (1) | (1) | (1) | (1) |
| White/ Caucasian ... | 186 | 11 | 27 | 67 | 51 | (1) | 30 | (1) | (1) | (1) | (1) | (1) |
| Black/Negro . | 51 | (1) | 35 | (1) | 16 | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian ..... | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other races .. | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematical scientists..... | 4,038 | 16 | 1,083 | 963 | 398 | 273 | 402 | 269 | 282 | 217 | 109 | 26 |
| White/ Caucasian ... | 3,576 | 16 | 979 | 823 | 343 | 236 | 354 | 229 | 263 | 198 | 109 | 26 |
| Black/Negro . | 370 | (1) | 104 | 103 | 37 | 19 | 48 | 21 | 19 | 19 | (1) | (1) |
| American Indian ..... | 18 | (1) | (1) | (1) | (1) | 18 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean ..... | 56 | (1) | (1) | 19 | 18 | (1) | (1) | 19 | (1) | (1) | (1) | (1) |
| Other races .. | 18 | (1) | (1) | 18 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |



See footnote at end of table.

**Table B-11—Con.**

| Field and race | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mathematicians | 2,664 | (1) | 794 | 596 | 350 | 176 | 354 | 107 | 115 | 107 | 65 | (1) |
| White/ Caucasian | 2,374 | (1) | 728 | 512 | 314 | 139 | 306 | 107 | 115 | 88 | 65 | (1) |
| Black/Negro | 254 | (1) | 66 | 84 | 18 | 19 | 48 | (1) | (1) | 19 | (1) | (1) |
| American Indian | 18 | (1) | (1) | (1) | (1) | 18 | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 18 | (1) | (1) | (1) | 18 | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 1,374 | 16 | 289 | 367 | 48 | 97 | 48 | 162 | 167 | 110 | 44 | 26 |
| White/ Caucasian | 1,202 | 16 | 251 | 311 | 29 | 97 | 48 | 122 | 148 | 110 | 44 | 26 |
| Black/Negro | 116 | (1) | 38 | 19 | 19 | (1) | (1) | 21 | 19 | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 38 | (1) | (1) | 19 | (1) | (1) | (1) | 19 | (1) | (1) | (1) | (1) |
| Other races | 18 | (1) | (1) | 18 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Computer specialists | 6,747 | (1) | 2,705 | 2,316 | 694 | 360 | 323 | 218 | (1) | 70 | 21 | 40 |
| White/ Caucasian | 6,429 | (1) | 2,648 | 2,190 | 672 | 269 | 301 | 218 | (1) | 70 | 21 | 40 |
| Black/Negro | 198 | (1) | 57 | 28 | 22 | 69 | 22 | (1) | (1) | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 120 | (1) | (1) | 98 | (1) | 22 | (1) | (1) | (1) | (1) | (1) | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 894 | (1) | 208 | 89 | 30 | 165 | 32 | 264 | 33 | 73 | (1) | (1) |
| White/ Caucasian | 774 | (1) | 208 | 76 | 30 | 75 | 32 | 247 | 33 | 73 | (1) | (1) |
| Black/Negro | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian | 13 | (1) | (1) | 13 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 107 | (1) | (1) | (1) | (1) | 90 | (1) | 17 | (1) | (1) | (1) | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth scientists | 817 | (1) | 196 | 89 | 30 | 165 | 32 | 199 | 33 | 73 | (1) | (1) |
| White/ Caucasian | 697 | (1) | 196 | 76 | 30 | 75 | 32 | 182 | 33 | 73 | (1) | (1) |
| Black/Negro | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian | 13 | (1) | (1) | 13 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 107 | (1) | (1) | (1) | (1) | 90 | (1) | 17 | (1) | (1) | (1) | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| White/ Caucasian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Black/Negro | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

**Table B-11—Con.**

| Field and race | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atmospheric scientists | 77 | (1) | 12 | (1) | (1) | (1) | (1) | 65 | (1) | (1) | (1) | (1) |
| White/ Caucasian | 77 | (1) | 12 | (1) | (1) | (1) | (1) | 65 | (1) | (1) | (1) | (1) |
| Black/Negro | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineers | 3,359 | (1) | 1,099 | 685 | 278 | 307 | 268 | 239 | 128 | 195 | 160 | (1) |
| White/ Caucasian | 3,027 | (1) | 948 | 617 | 260 | 239 | 268 | 212 | 128 | 195 | 160 | (1) |
| Black/Negro | 57 | (1) | 57 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 169 | (1) | 22 | 34 | 18 | 68 | (1) | 27 | (1) | (1) | (1) | (1) |
| Other races | 106 | (1) | 72 | 34 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Life scientists | 9,979 | 30 | 1,842 | 2,146 | 1,538 | 1,418 | 649 | 871 | 659 | 560 | 210 | 56 |
| White/ Caucasian | 9,126 | 30 | 1,728 | 1,971 | 1,374 | 1,231 | 594 | 801 | 645 | 486 | 210 | 56 |
| Black/Negro | 349 | (1) | 28 | 30 | 56 | 105 | 28 | 28 | (1) | 74 | (1) | (1) |
| American Indian | 14 | (1) | (1) | (1) | (1) | (1) | (1) | 14 | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 333 | (1) | 86 | 145 | 35 | 40 | 13 | 14 | (1) | (1) | (1) | (1) |
| Other races | 157 | (1) | (1) | (1) | 73 | 42 | 14 | 14 | 14 | (1) | (1) | (1) |
| Biological scientists | 6,334 | 30 | 1,415 | 1,615 | 776 | 728 | 439 | 538 | 476 | 182 | 108 | 27 |
| White/ Caucasian | 5,783 | 30 | 1,301 | 1,497 | 612 | 701 | 413 | 510 | 476 | 108 | 108 | 27 |
| Black/Negro | 201 | (1) | 28 | 30 | 56 | (1) | 13 | (1) | (1) | 74 | (1) | (1) |
| American Indian | 14 | (1) | (1) | (1) | (1) | (1) | (1) | 14 | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 249 | (1) | 86 | 86 | 35 | 13 | 13 | 14 | (1) | (1) | (1) | (1) |
| Other races | 87 | (1) | (1) | (1) | 73 | 14 | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 340 | (1) | 59 | 15 | 176 | (1) | (1) | 17 | (1) | (1) | 60 | 13 |
| White/ Caucasian | 340 | (1) | 59 | 15 | 176 | (1) | (1) | 17 | (1) | (1) | 60 | 13 |
| Black/Negro | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other races | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 3,305 | (1) | 368 | 516 | 586 | 690 | 210 | 316 | 183 | 378 | 42 | 16 |
| White/ Caucasian | 3,003 | (1) | 368 | 459 | 586 | 530 | 181 | 274 | 169 | 378 | 42 | 16 |
| Black/Negro | 148 | (1) | (1) | (1) | (1) | 105 | 15 | 28 | (1) | (1) | (1) | (1) |
| American Indian | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chinese, Japanese, Korean | 84 | (1) | (1) | 57 | (1) | 27 | (1) | (1) | (1) | (1) | (1) | (1) |
| Other races | 70 | (1) | (1) | (1) | (1) | 28 | 14 | 14 | 14 | (1) | (1) | (1) |

See footnote at end of table.

**Table B-11—Con.**

| Field and sex | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychologists .. | 9,784 | 16 | 1,570 | 1,670 | 1,331 | 1,300 | 1,137 | 879 | 706 | 549 | 403 | 223 |
| White/ Caucasian ... | 9,408 | 16 | 1,540 | 1,612 | 1,267 | 1,154 | 1,122 | 846 | 706 | 534 | 403 | 208 |
| Black/Negro . | 314 | [1] | 30 | 30 | 30 | 146 | 15 | 33 | [1] | 15 | [1] | 15 |
| American Indian ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 29 | [1] | [1] | 14 | 15 | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other races .. | 33 | [1] | [1] | 14 | 19 | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Social scientists | 10,081 | [1] | 2,880 | 1,609 | 1,201 | 979 | 943 | 945 | 691 | 425 | 265 | 143 |
| White/ Caucasian ... | 9,877 | [1] | 2,869 | 1,583 | 1,143 | 966 | 921 | 916 | 669 | 414 | 253 | 143 |
| Black/Negro . | 144 | [1] | 11 | 15 | 47 | 13 | [1] | 13 | 22 | 11 | 12 | [1] |
| American Indian ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 60 | [1] | [1] | 11 | 11 | [1] | 22 | 16 | [1] | [1] | [1] | [1] |
| Other races .. | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Economists ... | 1,900 | [1] | 345 | 517 | 144 | 210 | 118 | 222 | 136 | 66 | 142 | [1] |
| White/ Caucasian ... | 1,834 | [1] | 345 | 517 | 122 | 210 | 96 | 222 | 114 | 66 | 142 | [1] |
| Black/Negro . | 44 | [1] | [1] | [1] | 22 | [1] | [1] | [1] | 22 | [1] | [1] | [1] |
| American Indian ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 22 | [1] | [1] | [1] | [1] | [1] | 22 | [1] | [1] | [1] | [1] | [1] |
| Other races .. | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Sociologists/ anthropologists | 3,119 | [1] | 858 | 544 | 470 | 325 | 345 | 243 | 162 | 160 | 12 | [1] |
| White/ Caucasian ... | 3,074 | [1] | 847 | 544 | 459 | 325 | 345 | 243 | 162 | 149 | [1] | [1] |
| Black/Negro . | 34 | [1] | 11 | [1] | [1] | [1] | [1] | [1] | [1] | 11 | 12 | [1] |
| American Indian ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 11 | [1] | [1] | [1] | 11 | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other races .. | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Other social scientists ..... | 5,052 | [1] | 1,677 | 548 | 587 | 444 | 480 | 480 | 393 | 199 | 111 | 143 |
| White/ Caucasian ... | 4,969 | [1] | 1,677 | 522 | 562 | 431 | 480 | 451 | 393 | 199 | 111 | 143 |
| Black/Negro . | 66 | [1] | [1] | 15 | 25 | 13 | [1] | 13 | [1] | [1] | [1] | [1] |
| American Indian ..... | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |
| Chinese, Japanese, Korean ..... | 27 | [1] | [1] | 11 | [1] | [1] | [1] | 16 | [1] | [1] | [1] | [1] |
| Other races .. | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] | [1] |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

**Table B-12.—Number of women scientists and engineers by field, highest degree, and age: 1974**

| Field and highest degree | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total, all fields | 53,957 | 73 | 13,582 | 11,457 | 6,924 | 5,755 | 4,635 | 4,478 | 2,803 | 2,426 | 1,304 | 520 |
| Doctorate | 13,389 | (1) | C85 | 2,729 | 2,369 | 2,348 | 1,532 | 1,290 | 823 | 708 | 512 | 193 |
| Professional/ medical | 285 | (1) | (1) | 14 | 51 | 39 | 63 | 14 | 29 | 62 | 13 | (1) |
| Master's | 19,213 | (1) | 4,686 | 4,017 | 2,612 | 1,790 | 1,542 | 1,483 | 1,313 | 960 | 528 | 282 |
| Bachelor's | 21,055 | 73 | 8,011 | 4,697 | 1,892 | 1,563 | 1,498 | 1,691 | 638 | 696 | 251 | 45 |
| Associate | 15 | (1) | (1) | (1) | (1) | 15 | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Physical scientists | 9,075 | 11 | 2,195 | 1,979 | 1,454 | 953 | 881 | 793 | 304 | 337 | 136 | 32 |
| Doctorate | 2,543 | (1) | 196 | 664 | 538 | 377 | 255 | 247 | 43 | 114 | 109 | (1) |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 2,116 | (1) | 368 | 419 | 535 | 175 | 184 | 160 | 124 | 135 | (1) | 16 |
| Bachelor's | 4,416 | 11 | 1,631 | 896 | 381 | 401 | 442 | 386 | 137 | 88 | 27 | 16 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Physicists/ astronomers | 735 | (1) | 45 | 87 | 189 | 137 | 62 | 88 | 49 | 62 | (1) | 16 |
| Doctorate | 474 | (1) | 14 | 28 | 175 | 91 | 46 | 58 | 16 | 46 | (1) | (1) |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 197 | (1) | 16 | 59 | 14 | 30 | 16 | 14 | 16 | 16 | (1) | 16 |
| Bachelor's | 64 | (1) | 15 | (1) | (1) | 16 | (1) | 16 | 17 | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Chemists | 8,103 | (1) | 2,088 | 1,825 | 1,198 | 816 | 789 | 705 | 255 | 275 | 136 | 16 |
| Doctorate | 2,054 | (1) | 167 | 636 | 363 | 286 | 209 | 189 | 27 | 68 | 109 | (1) |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,808 | (1) | 352 | 333 | 454 | 145 | 151 | 146 | 108 | 119 | (1) | (1) |
| Bachelor's | 4,241 | (1) | 1,569 | 856 | 381 | 385 | 429 | 370 | 120 | 88 | 27 | 16 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other physical scientists | 237 | 11 | 62 | 67 | 67 | (1) | 30 | (1) | (1) | (1) | (1) | (1) |
| Doctorate | 15 | (1) | 15 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 111 | (1) | (1) | 27 | 67 | (1) | 17 | (1) | (1) | (1) | (1) | (1) |
| Bachelor's | 111 | 11 | 47 | 40 | (1) | (1) | 13 | (1) | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematical scientists | 4,038 | 16 | 1,083 | 963 | 398 | 273 | 402 | 269 | 282 | 217 | 109 | 26 |
| Doctorate | 532 | (1) | 71 | 146 | 52 | 97 | 13 | 66 | 24 | 39 | 12 | 13 |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,654 | (1) | 373 | 439 | 220 | 104 | 212 | 67 | 80 | 107 | 39 | 13 |
| Bachelor's | 1,852 | 16 | 639 | 378 | 126 | 72 | 177 | 137 | 178 | 71 | 58 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

**Table B-12—Con.**

| Field and highest degree | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mathematicians | 2,664 | (1) | 794 | 596 | 350 | 176 | 354 | 107 | 115 | 107 | 65 | (1) |
| Doctorate | 372 | (1) | 71 | 52 | 52 | 84 | 13 | 25 | 24 | 39 | 12 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,252 | (1) | 293 | 296 | 220 | 74 | 198 | 53 | 38 | 68 | 12 | (1) |
| Bachelor's | 1,040 | (1) | 430 | 248 | 78 | 18 | 143 | 29 | 53 | (1) | 41 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 1,374 | 16 | 289 | 367 | 48 | 97 | 48 | 162 | 167 | 110 | 44 | 26 |
| Doctorate | 160 | (1) | (1) | 94 | (1) | 13 | (1) | 40 | (1) | (1) | (1) | 13 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 402 | (1) | 80 | 143 | (1) | 30 | 14 | 14 | 42 | 39 | 27 | 13 |
| Bachelor's | 812 | 16 | 209 | 130 | 48 | 54 | 34 | 108 | 125 | 71 | 17 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Computer specialists | 6,747 | (1) | 2,705 | 2,316 | 694 | 360 | 323 | 218 | (1) | 70 | 21 | 40 |
| Doctorate | 166 | (1) | (1) | 110 | 15 | 26 | 15 | (1) | (1) | (1) | (1) | (1) |
| Professional/medical | 20 | (1) | (1) | (1) | (1) | (1) | 20 | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,437 | (1) | 556 | 435 | 193 | 39 | 123 | 13 | (1) | 38 | (1) | 40 |
| Bachelor's | 5,124 | (1) | 2,149 | 1,771 | 486 | 295 | 165 | 205 | (1) | 32 | 21 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 894 | (1) | 208 | 89 | 30 | 165 | 32 | 264 | 33 | 73 | (1) | (1) |
| Doctorate | 230 | (1) | (1) | 27 | 15 | 47 | (1) | 111 | 17 | 13 | (1) | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 560 | (1) | 165 | 62 | (1) | 103 | 17 | 137 | 16 | 60 | (1) | (1) |
| Bachelor's | 104 | (1) | 43 | (1) | 15 | 15 | 15 | 16 | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Earth scientists | 817 | (1) | 196 | 89 | 30 | 165 | 32 | 199 | 33 | 73 | (1) | (1) |
| Doctorate | 165 | (1) | (1) | 27 | 15 | 47 | (1) | 46 | 17 | 13 | (1) | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 548 | (1) | 153 | 62 | (1) | 103 | 17 | 137 | 16 | 60 | (1) | (1) |
| Bachelor's | 104 | (1) | 43 | (1) | 15 | 15 | 15 | 16 | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Doctorate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Bachelor's | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

**Table B-12—Con.**

| Field and highest degree | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Atmospheric scientists | 77 | (1) | 12 | (1) | (1) | (1) | (1) | 65 | (1) | (1) | (1) | (1) |
| Doctorate | 65 | (1) | (1) | (1) | (1) | (1) | (1) | 65 | (1) | (1) | (1) | (1) |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 12 | (1) | 12 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Bachelor's | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineers | 3,359 | (1) | 1,099 | 685 | 278 | 307 | 268 | 239 | 128 | 195 | 160 | (1) |
| Doctorate | 26 | (1) | (1) | (1) | 14 | (1) | 12 | (1) | (1) | (1) | (1) | (1) |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,234 | (1) | 408 | 237 | 167 | 88 | 16 | 77 | 128 | 64 | 49 | (1) |
| Bachelor's | 2,084 | (1) | 691 | 448 | 97 | 204 | 240 | 162 | (1) | 131 | 111 | (1) |
| Associate | 15 | (1) | (1) | (1) | (1) | 15 | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Life scientists | 9,979 | 30 | 1,842 | 2,146 | 1,538 | 1,418 | 649 | 871 | 659 | 560 | 210 | 56 |
| Doctorate | 3,034 | (1) | 177 | 683 | 493 | 539 | 274 | 266 | 378 | 100 | 97 | 27 |
| Professional/ medical | 192 | (1) | (1) | 14 | 51 | 39 | 29 | 14 | 13 | 32 | (1) | (1) |
| Master's | 3,594 | (1) | 751 | 792 | 554 | 493 | 240 | 278 | 114 | 303 | 113 | 16 |
| Bachelor's | 3,159 | 30 | 914 | 657 | 440 | 347 | 106 | 373 | 154 | 125 | (1) | 13 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Biological scientists | 6,334 | 30 | 1,415 | 1,615 | 776 | 728 | 439 | 538 | 476 | 182 | 108 | 27 |
| Doctorate | 2,318 | (1) | 177 | 615 | 396 | 301 | 181 | 225 | 288 | 39 | 69 | 27 |
| Professional/ medical | 14 | (1) | (1) | 14 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 2,401 | (1) | 720 | 674 | 223 | 206 | 189 | 131 | 89 | 130 | 39 | (1) |
| Bachelor's | 1,601 | 30 | 518 | 312 | 157 | 221 | 69 | 182 | 99 | 13 | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 340 | (1) | 59 | 15 | 176 | (1) | (1) | 17 | (1) | (1) | 60 | 13 |
| Doctorate | 67 | (1) | (1) | (1) | 67 | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Professional/ medical | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 184 | (1) | 15 | (1) | 109 | (1) | (1) | (1) | (1) | (1) | 60 | (1) |
| Bachelor's | 89 | (1) | 44 | 15 | (1) | (1) | (1) | 17 | (1) | (1) | (1) | 13 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 3,305 | (1) | 368 | 516 | 586 | 690 | 210 | 316 | 183 | 378 | 42 | 16 |
| Doctorate | 649 | (1) | (1) | 68 | 30 | 238 | 93 | 41 | 90 | 61 | 28 | (1) |
| Professional/ medical | 178 | (1) | (1) | (1) | 51 | 39 | 29 | 14 | 13 | 32 | (1) | (1) |
| Master's | 1,009 | (1) | 16 | 118 | 222 | 287 | 51 | 87 | 25 | 173 | 14 | 16 |
| Bachelor's | 1,469 | (1) | 352 | 330 | 283 | 126 | 37 | 174 | 55 | 112 | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table

**Table B-12—Con.**

| Field and highest degree | Total | Under 25 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70 & over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychologists . . | 9,784 | 16 | 1,570 | 1,670 | 1,331 | 1,300 | 1,137 | 879 | 706 | 549 | 403 | 223 |
| Doctorate . . . . | 4,141 | (1) | 263 | 539 | 861 | 742 | 645 | 397 | 208 | 222 | 123 | 141 |
| Professional/ medical . . . . . | 13 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | 13 | (1) |
| Master's . . . . . | 4,617 | (1) | 881 | 954 | 444 | 544 | 402 | 405 | 498 | 173 | 250 | 66 |
| Bachelor's . . . | 1,013 | 16 | 426 | 177 | 26 | 14 | 90 | 77 | (1) | 154 | 17 | 16 |
| Associate . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other . . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Social scientists | 10,081 | (1) | 2,880 | 1,609 | 1,201 | 979 | 943 | 945 | 691 | 425 | 265 | 143 |
| Doctorate . . . . | 2,717 | (1) | 178 | 560 | 381 | 520 | 318 | 204 | 153 | 220 | 171 | 12 |
| Professional/ medical . . . . . | 60 | (1) | (1) | (1) | (1) | (1) | 14 | (1) | 16 | 30 | (1) | (1) |
| Master's . . . . . | 4,001 | (1) | 1,184 | 679 | 499 | 244 | 348 | 406 | 353 | 80 | 77 | 131 |
| Bachelor's . . . | 3,303 | (1) | 1,518 | 370 | 321 | 215 | 263 | 335 | 169 | 95 | 17 | (1) |
| Associate . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other . . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Economists . . . | 1,900 | (1) | 345 | 517 | 144 | 210 | 118 | 222 | 136 | 66 | 142 | (1) |
| Doctorate . . . . | 529 | (1) | 29 | 114 | 106 | 31 | 53 | 63 | 22 | (1) | 111 | (1) |
| Professional/ medical | 46 | (1) | (1) | (1) | (1) | (1) | (1) | (1) | 16 | 30 | (1) | (1) |
| Master's . . . . . | 559 | (1) | 123 | 212 | 16 | 65 | (1) | 63 | 48 | 18 | 14 | (1) |
| Bachelor's . . . | 766 | (1) | 193 | 191 | 22 | 114 | 65 | 96 | 50 | 18 | 17 | (1) |
| Associate . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other . . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Sociologists/ anthropologists | 3,119 | (1) | 858 | 544 | 470 | 325 | 345 | 243 | 162 | 160 | 12 | (1) |
| Doctorate . . . . | 1,215 | (1) | (1) | 267 | 153 | 288 | 168 | 88 | 91 | 160 | (1) | (1) |
| Professional/ medical . . . . . | 14 | (1) | (1) | (1) | (1) | (1) | 14 | (1) | (1) | (1) | (1) | (1) |
| Master's . . . . . | 1,255 | (1) | 461 | 245 | 172 | 25 | 114 | 155 | 71 | (1) | 12 | (1) |
| Bachelor's . . . | 635 | (1) | 397 | 32 | 145 | 12 | 49 | (1) | (1) | (1) | (1) | (1) |
| Associate . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other . . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other social scientists . . . . . | 5,062 | (1) | 1,677 | 548 | 587 | 444 | 480 | 480 | 393 | 199 | 111 | 143 |
| Doctorate . . . . | 973 | (1) | 149 | 179 | 122 | 201 | 97 | 53 | 40 | 60 | 60 | 12 |
| Professional/ medical . . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's . . . . . | 2,187 | (1) | 800 | 222 | 311 | 154 | 234 | 188 | 234 | 62 | 51 | 131 |
| Bachelor's . . . | 1,902 | (1) | 928 | 147 | 154 | 89 | 149 | 239 | 119 | 77 | (1) | (1) |
| Associate . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| Other . . . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree . . . | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) | (1) |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

## Table B-13. — Number of women scientists and engineers by field, highest degree, and race: 1974

| Field and highest degree | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Total, all fields | 53,957 | 50,037 | 1,714 | 45 | 1,422 | 739 |
| Doctorate | 13,389 | 12,354 | 360 | 13 | 458 | 204 |
| Professional/medical | 285 | 243 | (1) | (1) | 14 | 28 |
| Master's | 19,213 | 17,832 | 638 | (1) | 605 | 138 |
| Bachelor's | 21,055 | 19,583 | 716 | 32 | 345 | 369 |
| Associate | 15 | 15 | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Physical scientists | 9,075 | 7,820 | 282 | (1) | 548 | 425 |
| Doctorate | 2,543 | 2,143 | 25 | (1) | 305 | 70 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 2,116 | 1,887 | 83 | (1) | 112 | 34 |
| Bachelor's | 4,416 | 3,790 | 174 | (1) | 131 | 321 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Chemists | 8,103 | 6,952 | 199 | (1) | 527 | 425 |
| Doctorate | 2,054 | 1,675 | 25 | (1) | 284 | 70 |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,808 | 1,627 | 35 | (1) | 112 | 34 |
| Bachelor's | 4,241 | 3,650 | 139 | (1) | 131 | 321 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Physicists/astronomers | 735 | 682 | 32 | (1) | 21 | (1) |
| Doctorate | 474 | 453 | (1) | (1) | 21 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 197 | 165 | 32 | (1) | (1) | (1) |
| Bachelor's | 64 | 64 | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Other physical scientists | 237 | 186 | 51 | (1) | (1) | (1) |
| Doctorate | 15 | 15 | (1) | (1) | (1) | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 111 | 95 | 16 | (1) | (1) | (1) |
| Bachelor's | 111 | 76 | 35 | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematical scientists | 4,038 | 3,576 | 370 | 18 | 56 | 18 |
| Doctorate | 532 | 473 | 40 | (1) | 19 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,654 | 1,477 | 122 | (1) | 37 | 18 |
| Bachelor's | 1,852 | 1,626 | 208 | 18 | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Mathematicians | 2,664 | 2,374 | 254 | 18 | 18 | (1) |
| Doctorate | 372 | 353 | 19 | (1) | (1) | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,252 | 1,131 | 103 | (1) | 18 | (1) |
| Bachelor's | 1,040 | 890 | 132 | 18 | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Statisticians | 1,374 | 1,202 | 116 | (1) | 38 | 18 |
| Doctorate | 160 | 120 | 21 | (1) | 19 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 402 | 346 | 19 | (1) | 19 | 18 |
| Bachelor's | 812 | 736 | 76 | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Computer specialists | 6,747 | 6,429 | 198 | (1) | 120 | (1) |
| Doctorate | 166 | 166 | (1) | (1) | (1) | (1) |
| Professional/medical | 20 | 20 | (1) | (1) | (1) | (1) |
| Master's | 1,437 | 1,437 | (1) | (1) | (1) | (1) |
| Bachelor's | 5,124 | 4,806 | 198 | (1) | 120 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Environmental scientists | 894 | 774 | (1) | 13 | 107 | (1) |
| Doctorate | 230 | 183 | (1) | 13 | 34 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 560 | 487 | (1) | (1) | 73 | (1) |
| Bachelor's | 104 | 104 | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |

See footnote at end of table.

Table B-13—Con.

| Field and highest degree | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Earth scientists | 817 | 697 | (1) | 13 | 107 | (1) |
| Doctorate | 165 | 118 | (1) | 13 | 34 | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 548 | 475 | (1) | (1) | 73 | (1) |
| Bachelor's | 104 | 104 | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Oceanographers | (1) | (1) | (1) | (1) | (1) | (1) |
| Doctorate | (1) | (1) | (1) | (1) | (1) | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | (1) | (1) | (1) | (1) | (1) | (1) |
| Bachelor's | (1) | (1) | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Atmospheric scientists | 77 | 77 | (1) | (1) | (1) | (1) |
| Doctorate | 65 | 65 | (1) | (1) | (1) | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 12 | 12 | (1) | (1) | (1) | (1) |
| Bachelor's | (1) | (1) | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Engineers | 3,359 | 3,027 | 57 | (1) | 169 | 106 |
| Doctorate | 26 | 26 | (1) | (1) | (1) | |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 1,234 | 1,015 | (1) | (1) | 147 | 72 |
| Bachelor's | 2,064 | 1,971 | 57 | (1) | 22 | 34 |
| Associate | 15 | 15 | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Life scientists | 9,979 | 9,126 | 349 | 14 | 333 | 157 |
| Doctorate | 3,034 | 2,807 | 56 | (1) | 56 | 115 |
| Professional/medical | 192 | 150 | (1) | (1) | 14 | 28 |
| Master's | 3,594 | 3,152 | 251 | (1) | 191 | (1) |
| Bachelor's | 3,159 | 3,017 | 42 | 14 | 72 | 14 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |

| Field and highest degree | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Biologists | 6,334 | 5,783 | 201 | 14 | 249 | 87 |
| Doctorate | 2,318 | 2,147 | 41 | (1) | 43 | 87 |
| Professional/medical | 14 | 14 | (1) | (1) | (1) | (1) |
| Master's | 2,401 | 2,121 | 146 | (1) | 134 | (1) |
| Bachelor's | 1,601 | 1,501 | 14 | 14 | 72 | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Agricultural scientists | 340 | 340 | (1) | (1) | (1) | (1) |
| Doctorate | 67 | 67 | (1) | (1) | (1) | (1) |
| Professional/medical | (1) | (1) | (1) | (1) | (1) | (1) |
| Master's | 184 | 184 | (1) | (1) | (1) | (1) |
| Bachelor's | 89 | 89 | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Medical scientists | 3,305 | 3,003 | 148 | (1) | 84 | 70 |
| Doctorate | 649 | 593 | 15 | (1) | 13 | 28 |
| Professional/medical | 178 | 136 | (1) | (1) | 14 | 28 |
| Master's | 1,009 | 847 | 105 | (1) | 57 | (1) |
| Bachelor's | 1,469 | 1,427 | 28 | (1) | (1) | 14 |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Psychologists | 9,784 | 9,408 | 314 | (1) | 29 | 33 |
| Doctorate | 4,141 | 3,916 | 206 | (1) | (1) | 19 |
| Professional/medical | 13 | 13 | (1) | (1) | (1) | (1) |
| Master's | 4,617 | 4,466 | 108 | (1) | 29 | 14 |
| Bachelor's | 1,013 | 1,013 | (1) | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |
| Social scientists | 10,081 | 9,877 | 144 | (1) | 60 | (1) |
| Doctorate | 2,717 | 2,640 | 33 | (1) | 44 | (1) |
| Professional/medical | 60 | 60 | (1) | (1) | (1) | (1) |
| Master's | 4,001 | 3,911 | 74 | (1) | 16 | (1) |
| Bachelor's | 3,303 | 3,266 | 37 | (1) | (1) | (1) |
| Associate | (1) | (1) | (1) | (1) | (1) | (1) |
| Other | (1) | (1) | (1) | (1) | (1) | (1) |
| No degree | (1) | (1) | (1) | (1) | (1) | (1) |

Table B-13—Con.

| Field and highest degree | Total | White/ Caucasian | Black/ Negro | American Indian | Chinese, Japanese, Korean | Other |
|---|---|---|---|---|---|---|
| Economists | 1,900 | 1,834 | 44 | [1] | 22 | [1] |
| Doctorate | 529 | 485 | 22 | [1] | 22 | [1] |
| Professional/medical | 46 | 46 | [1] | [1] | [1] | [1] |
| Master's | 559 | 559 | [1] | [1] | [1] | [1] |
| Bachelor's | 766 | 744 | 22 | [1] | [1] | [1] |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] |
| Sociologists/ anthropologists | 3,119 | 3,074 | 34 | [1] | 11 | [1] |
| Doctorate | 1,215 | 1,193 | 11 | [1] | 11 | [1] |
| Professional/medical | 14 | 14 | [1] | [1] | [1] | [1] |
| Master's | 1,255 | 1,232 | 23 | [1] | [1] | [1] |
| Bachelor's | 635 | 635 | [1] | [1] | [1] | [1] |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] |
| Other social scientists | 5,062 | 4,969 | 66 | [1] | 27 | [1] |
| Doctorate | 973 | 962 | [1] | [1] | 11 | [1] |
| Professional/medical | [1] | [1] | [1] | [1] | [1] | [1] |
| Master's | 2,187 | 2,120 | 51 | [1] | 16 | [1] |
| Bachelor's | 1,902 | 1,887 | 15 | [1] | [1] | [1] |
| Associate | [1] | [1] | [1] | [1] | [1] | [1] |
| Other | [1] | [1] | [1] | [1] | [1] | [1] |
| No degree | [1] | [1] | [1] | [1] | [1] | [1] |

[1]No cases reported.
SOURCE: National Science Foundation, National Sample, 1974.

# APPENDIX C

## A Listing of Detailed Statistical Tables in Parts II and III **(To be published later)**

## PART II. EMPLOYMENT CHARACTERISTICS

### SCIENTISTS AND ENGINEERS BY FIELD

By highest degree and employment status: 1974
By highest degree and type of employer: 1974
By highest degree and primary work activity: 1974
By age and type of employer: 1974
By primary work activity and type of employer: 1974
By highest degree and critical national interest: 1974
By sex and employment status: 1974
By age and employment status: 1974
By race and employment status: 1974
Receiving Federal support, by type of employer and agency of support: 1974
Receiving Federal support, by highest degree and agency of support: 1974
Receiving Federal support, by primary work activity and agency of support: 1974
Doctorates by primary work activity and type of employer: 1974
Master's-degree holders by primary work activity and type of employer: 1974
Bachelor's-degree holders by primary work activity and type of employer: 1974

### WOMEN SCIENTISTS AND ENGINEERS BY FIELD

By type of employer: 1974
By primary work activity: 1974
Median annual salary by race and age: 1974
Median annual salary by highest degree: 1974



### MEDIAN ANNUAL SALARIES OF SCIENTISTS AND ENGINEERS BY FIELD

By highest degree and type of employer: 1974
By highest degree and primary work activity: 1974
By primary work activity and type of employer: 1974
By sex and age: 1974
By race and age: 1974
By sex and race: 1974
By highest degree and employed in science and engineering or other than science and engineering: 1974
By type of employer and employed in science and engineering or other than science and engineering: 1974
Doctorates by primary work activity and type of employer: 1974
Master's-degree holders by primary work activity and type of employer: 1974
Bachelor's-degree holders by primary work activity and type of employer: 1974

80

## PART-III. GEOGRAPHIC CHARACTERISTICS

### SCIENTISTS AND ENGINEERS BY STANDARD METROPOLITAN STATISTICAL AREA

By field: 1974
By highest degree: 1974
By type of employer: 1974
By primary work activity: 1974

### MEDIAN ANNUAL SALARIES BY STANDARD METROPOLITAN STATISTICAL AREA

By field: 1974
By highest degree: 1974
By type of employer: 1974
By primary work activity: 1974

Scientists and engineers receiving Federal support by State and agency of support: 1974

# APPENDIX D

Reproduction of 1974
Questionnaire and Reference Lists

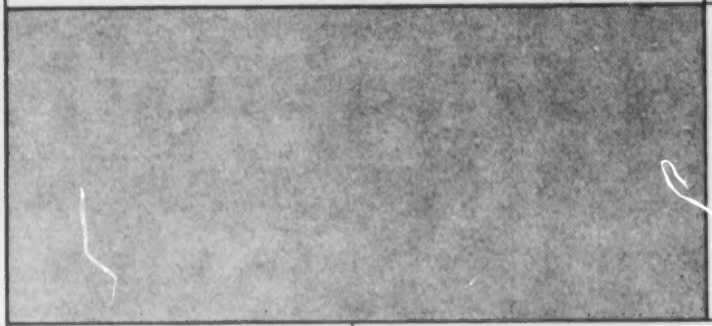
O.M.B. No. 41-S73084; Approval Expires December 31, 1974

FORM PMS-14A (10-29-73)

U.S. DEPARTMENT OF COMMERCE
SOCIAL AND ECONOMIC STATISTICS ADMIN.
BUREAU OF THE CENSUS

# 1974 NATIONAL SURVEY OF SCIENTISTS AND ENGINEERS

**NOTICE** – Your report to the Census Bureau is confidential by law (Title 13, U.S. Code). It may be seen only by sworn Census employees and may be used only for statistical purposes.



***Please read*** instructions carefully before answering questions.

Answer as accurately as you can by printing your reply clearly or by entering an "X" in the box next to the appropriate reply.

If the instructions for a question direct you to enter a code and description from a list, please refer to the reference list attached to this questionnaire.

**A. Is the information shown in the mailing label above correct?**

☐ YES

☐ NO – *Please enter the correct information*

Name

Number and street

City or town | State (if USA) (010) | ZIP code

Foreign country

**B. Is this mailing address the same address as your place of residence?**

☐ SAME

☐ DIFFERENT – *Please enter your city and State or foreign country of residence.*

City or town | State (if USA) (011) | ZIP code

Foreign country

Dear Friend:

Let us express our appreciation for your cooperation in the 1972 Professional, Technical, and Scientific Manpower Survey which we conducted under the sponsorship of the National Science Foundation. Reports including statistical summaries based on this survey are now being used in analysis and planning by Federal and State manpower agencies, private businesses, nonprofit research organizations, industrial and trade associations, and university scholars.

As you are very likely aware, there have been significant changes in the past few years in the patterns of both public and private expenditures related to science and technology. It is important to know how these changes affect highly trained persons. The sample of persons canvassed in the 1972 survey is unique in its coverage of scientific and technical manpower and, for this reason, the National Science Foundation has asked the Bureau to again survey this panel to obtain current employment information and related data. For the survey to be successful and yield truly representative information, it is important that each person fill out and return his questionnaire.

Please complete the questions which follow on pages 2 through 4 and return your questionnaire in the enclosed preaddressed envelope. For most persons only a portion of the questions are applicable and need to be completed. For some questions you are instructed to enter a code and description from Reference List A, B, or C. These lists are attached to the questionnaire.

Please be assured that the information you provide is confidential by law and may be seen only by sworn Census employees; it cannot be used for anything but statistical purposes and cannot be given to any other Government agency, private concern, or individual except in the form of statistical summaries from which it is impossible to identify information about any particular person.

Your participation in this voluntary survey will be appreciated.

Thank you for your cooperation.

Sincerely,

Vincent P Barabba

VINCENT P. BARABBA
Director
Bureau of the Census

Enclosure

## PART I – EDUCATION AND TRAINING

**1. EDUCATIONAL ATTAINMENT**

**How many years of education or formal training BEYOND HIGH SCHOOL have you COMPLETED?** (Include college, junior college, graduate school, law school, business college, technical institute, etc., but **do not include** work taken through correspondence courses, on-the-job training, apprenticeship, or at employer's training facility. For any education received in foreign or ungraded schools, mark the equivalent number of years in the regular American school system.)

(012) ☐ 0 years ☐ 1 year ☐ 2 years ☐ 3 years ☐ 4 years ☐ 5 years ☐ 6 years ☐ 7 years ☐ 8 years or more

**2. EDUCATION SINCE 1971**

a. **Since 1971, have you attended any college, university, or other post-high school institution?**

(013) 1 ☐ Yes – *Continue with 2b* 2 ☐ No – *SKIP to question 3*

b. List below each institution from which you have obtained or are currently obtaining formal training beyond the high school level and give the other information requested. Begin with the most recent and work back through 1972. Use a separate column for each degree granted or worked for. Designate degrees by abbreviation (e.g., A.A., B.A., M.A., Ph.D., LL.B., M.D., etc.). **Do not include** work taken through correspondence courses, on-the-job training, apprenticeship, or at employer's training facility.

| | MOST RECENT | SECOND-TO-LAST | THIRD-TO-LAST |
|---|---|---|---|
| | (014) ☐☐☐ | (015) ☐☐☐ | (016) ☐☐☐ |
| (1) College, university, etc. *(Enter name, city, and State or foreign country)* | Name _____ City _____ State or foreign country | Name _____ City _____ State or foreign country | Name _____ City _____ State or foreign country |
| (2) Year attendance ended | (017) 2 ☐ 1972 3 ☐ 1973 4 ☐ 1974 5 ☐ Now enrolled | (018) 2 ☐ 1972 3 ☐ 1973 4 ☐ 1974 | (019) 2 ☐ 1972 3 ☐ 1973 |
| (3) Type of degree worked for, if any *(Enter A.A., B.S.E.E., B.A., etc. or mark "None" box)* | (020) _____ x ☐ None | (021) _____ x ☐ None | (022) _____ x ☐ None |
| (4) Year degree awarded or to be awarded *(Enter year or mark "None" box)* | (023) 19_____ x ☐ None | (024) 19_____ x ☐ None | (025) 19_____ x ☐ None |
| (5) Major field of study *(Enter code and description from Reference List A.)* | (026) Code ☐☐☐ Description _____ | (027) Code ☐☐☐ Description _____ | (028) Code ☐☐☐ Description _____ |

**3. OTHER TRAINING SINCE 1971**

Aside from formal education, which of the following types of training did you receive in 1972 or 1973?

*(Mark the appropriate year for each type of training you have received.)*

| | 1972 (029) | 1973 (030) |
|---|---|---|
| 1. On-the-job training | 1 ☐ | 1 ☐ |
| 2. Military training applicable to civilian occupations | 2 ☐ | 2 ☐ |
| 3. Extension or correspondence courses | 3 ☐ | 3 ☐ |
| 4. Courses at employers training facility | 4 ☐ | 4 ☐ |
| 5. Courses at adult education center | 5 ☐ | 5 ☐ |
| 6. Other training | 6 ☐ | 6 ☐ |
| 7. None | 7 ☐ | 7 ☐ |

## PART II – WORK STATUS

*(Complete questions 4 through 9 for column (A) and then for column (B))*

| | Work status during the last full week in January 1974 (January 20–26) (A) | Work status during the last full week in January 1973 (January 21–27) (B) |
|---|---|---|
| **4. Were you working during that week?** | (031) 1 ☐ Yes, working full time – *SKIP to 6* 2 ☐ Yes, working part time – *Continue with 5* 3 ☐ No, not working – *SKIP to 8* | (032) 1 ☐ Yes, working full time – *SKIP to 6* 2 ☐ Yes, working part time – *Continue with 5* 3 ☐ No, not working – *SKIP to 8* |
| **5. If you worked part time, were you seeking full-time employment?** | (033) 1 ☐ Yes, seeking full-time work 2 ☐ No, preferred part-time work 3 ☐ No, full-time work not available | (034) 1 ☐ Yes, seeking full-time work 2 ☐ No, preferred part-time work 3 ☐ No, full-time work not available |
| **6. Were you working in a position related to science or engineering?** | (035) 1 ☐ Yes – *SKIP to 9* 2 ☐ No – *Continue with 7* | (036) 1 ☐ Yes – *SKIP to 9* 2 ☐ No – *Continue with 7* |
| **7. If you were working in a position NOT related to science or engineering, what was the MOST important reason for taking this position?** | *(MARK ONLY ONE BOX)* (037) 1 ☐ Preferred nonscience or nonengineering position 2 ☐ Promoted out of science or engineering position 3 ☐ Pay was better in nonscience or nonengineering position 4 ☐ Locational preference 5 ☐ Science or engineering position not available 6 ☐ Other – *Specify* _____ | *(MARK ONLY ONE BOX)* (038) 1 ☐ Preferred nonscience or nonengineering position 2 ☐ Promoted out of science or engineering position 3 ☐ Pay was better in nonscience or nonengineering position 4 ☐ Locational preference 5 ☐ Science or engineering position not available 6 ☐ Other – *Specify* _____ |
| **8. If you were not working, were you principally —** | *(MARK ONLY ONE BOX)* (039) 1 ☐ On vacation or otherwise temporarily absent from a job for health or personal reasons 2 ☐ On temporary layoff from a job 3 ☐ Looking for work 4 ☐ Retired 5 ☐ Student 6 ☐ Tending to family responsibilities 7 ☐ Other – *Specify* _____ | *(MARK ONLY ONE BOX)* (040) 1 ☐ On vacation or otherwise temporarily absent from a job for health or personal reasons 2 ☐ On temporary layoff from a job 3 ☐ Looking for work 4 ☐ Retired 5 ☐ Student 6 ☐ Tending to family responsibilities 7 ☐ Other – *Specify* _____ |
| **9. Were you on a post doctoral appointment?** | (041) 1 ☐ Yes 2 ☐ No | (042) 1 ☐ Yes 2 ☐ No |

78

## PART III – JOB ACTIVITIES

**INSTRUCTIONS FOR COMPLETING QUESTIONS 10–18**

a. Complete column (A) for questions 10 through 18 for the job held during the last full week of January 1974 or for your most recent prior job held.

b. Column (B) should be completed if the job you had during the last full week of January 1973 differed from the job described in column (A). If the job was the same, mark (X) the "Same job as column (A)" box at the top of column (B). **NOTE:** Consider a change in jobs to have occurred if there were significant changes in duties, level of responsibility, or occupation even if you continued to work for the same employer.

c. If you held more than one job during the weeks mentioned above, please report **only** the job at which you worked the **greatest** number of hours.

| | Job held during week of January 20–26, 1974 or most recent prior job (A) | Job held during week of January 21–27, 1973 (B) — SAME JOB AS COLUMN (A) (043) ☐ |
|---|---|---|
| **10. Where did you work?** *Location (city and State or foreign country) of company, business, agency, or other employer.* | (044) ☐☐☐ City _____ (046) ☐☐☐ State or foreign country _____ | (045) ☐☐☐ City _____ (047) ☐☐☐ State or foreign country _____ |
| **11. What kind of business was this?** *Enter code and description from Reference List B. If the organization conducted activities at different locations (e.g., research at one location and manufacturing at another), enter the activity at the location where you worked.* | (048) Code ☐☐☐ Description _____ | (049) Code ☐☐☐ Description _____ |
| **12. What was your occupation?** *Enter code and description from Reference List C.* | (050) Code ☐☐☐ Description _____ | (051) Code ☐☐☐ Description _____ |
| **13. What work activities were related to this position?** *(Mark all activities in which you spent time)* | 01 ☐ Management or administration of research and development<br>02 ☐ Management or administration of other than research and development<br>03 ☐ Teaching and training – preparing and teaching courses, guiding and counseling students or trainees<br>04 ☐ Basic research<br>05 ☐ Applied research<br>06 ☐ Development – product, process, and technical development<br>07 ☐ Report and technical writing, editing, information retrieval<br>08 ☐ Clinical diagnosis – diagnosis, treatment, etc. for patients or clients<br>09 ☐ Design – of equipment, processes, models; drafting, drawing, blueprints<br>10 ☐ Quality control, testing, evaluation, or inspection of equipment, materials, devices<br>11 ☐ Operations – production, maintenance, construction, installation<br>12 ☐ Distribution – sales, traffic, purchasing, customer and public relations<br>13 ☐ Statistical work – designing and conducting sample and other surveys, forecasting, statistical analysis<br>14 ☐ Consulting – on technical aspects of professional, scientific, and management fields or products<br>15 ☐ Computer applications – programming, data systems analysis, development of programming techniques, controlling computer operations<br>16 ☐ Other activities – *Specify* | 01 ☐ Management or administration of research and development<br>02 ☐ Management or administration of other than research and development<br>03 ☐ Teaching and training – preparing and teaching courses, guiding and counseling students or trainees<br>04 ☐ Basic research<br>05 ☐ Applied research<br>06 ☐ Development – product, process, and technical development<br>07 ☐ Report and technical writing, editing, information retrieval<br>08 ☐ Clinical diagnosis – diagnosis, treatment, etc. for patients or clients<br>09 ☐ Design – of equipment, processes, models; drafting, drawing, blueprints<br>10 ☐ Quality control, testing, evaluation, or inspection of equipment, materials, devices<br>11 ☐ Operations – production, maintenance, construction, installation<br>12 ☐ Distribution – sales, traffic, purchasing, customer and public relations<br>13 ☐ Statistical work – designing and conducting sample and other surveys, forecasting, statistical analysis<br>14 ☐ Consulting – on technical aspects of professional, scientific, and management fields or products<br>15 ☐ Computer applications – programming, data systems analysis, development of programming techniques, controlling computer operations<br>16 ☐ Other activities – *Specify* |
| **14. Among all the activities marked above (in question 13) which in terms of working hours spent was your primary and which was your major secondary activity?** *Fill in the appropriate code numbers from the activities in question 13.* | CODE<br>(052) _____ Primary<br>(054) _____ Secondary | CODE<br>(053) _____ Primary<br>(055) _____ Secondary |
| **15. Were you primarily —** | *(MARK ONLY ONE BOX)*<br>(056) 1 ☐ Employee of private company, business, or individual for wages, salary, or commissions<br>2 ☐ Employee of nonprofit organization (excluding government)<br>3 ☐ Federal government employee<br>4 ☐ State government employee<br>5 ☐ Local government employee (city, county, etc.)<br>6 ☐ Employee of international organization<br>Self-employed in own business, profession, or farm<br>7 ☐ Own business – not incorporated<br>8 ☐ Own business – incorporated<br>9 ☐ Working without pay in family business or farm | *(MARK ONLY ONE BOX)*<br>(057) 1 ☐ Employee of private company, business, or individual for wages, salary, or commissions<br>2 ☐ Employee of nonprofit organization (excluding government)<br>3 ☐ Federal government employee<br>4 ☐ State government employee<br>5 ☐ Local government employee (city, county, etc.)<br>6 ☐ Employee of international organization<br>Self-employed in own business, profession, or farm<br>7 ☐ Own business – not incorporated<br>8 ☐ Own business – incorporated<br>9 ☐ Working without pay in family business or farm |



84

## PART III – JOB ACTIVITIES – Continued

| | Job held during week of January 20–26, 1974, or most recent prior job (A) | Job held during week of January 21–27, 1973 (B) | SAME JOB AS COLUMN (A) ☐ |
|---|---|---|---|
| **16. Between what dates did you hold this position?** *Enter month and year* | (058) From ____ To (059) | (060) From ____ To (061) | |
| **17. What was the basic salary associated with this position?** If you were on a post-doctoral appointment, include stipend plus allowances. Indicate whether the figure entered is per year, per month, or per week. (Basic salary refers to salary before deductions for income tax, social security, retirement, etc., but does not include bonuses, overtime, summer teaching, or other payment for secondary jobs.) | (062) $ _____.00<br>(064) 1 ☐ Per year<br>2 ☐ Per month<br>3 ☐ Per week<br>**If academically employed, mark whether salary is for –**<br>(066) 1 ☐ 9–10 months<br>2 ☐ 11–12 months | (063) $ _____.00<br>(065) 1 ☐ Per year<br>2 ☐ Per month<br>3 ☐ Per week<br>**If academically employed, mark whether salary is for –**<br>(067) 1 ☐ 9–10 months<br>2 ☐ 11–12 months | |
| **18a. Was ANY of your work supported or sponsored by U.S. Government funds?** | (068) 1 ☐ Yes – *Continue with 18b*<br>2 ☐ No ..... } *SKIP to 19a*<br>3 ☐ Don't know | (069) 1 ☐ Yes – *Continue with 18b*<br>2 ☐ No ..... } *SKIP to 19a*<br>3 ☐ Don't know | |
| **b. Which of the following agencies or departments were supporting the work?** | (070) 1 ☐ Department of Housing and Urban Development<br>2 ☐ Department of the Interior<br>3 ☐ Department of Labor<br>4 ☐ Department of Defense<br>5 ☐ Department of Commerce<br>6 ☐ Department of Agriculture | (071) 1 ☐ Department of Housing and Urban Development<br>2 ☐ Department of the Interior<br>3 ☐ Department of Labor<br>4 ☐ Department of Defense<br>5 ☐ Department of Commerce<br>6 ☐ Department of Agriculture | |
| | (072) 7 ☐ Department of Transportation<br>8 ☐ Department of Justice<br>Department of Health, Education and Welfare<br>9 ☐ NIH (National Institutes of Health)<br>10 ☐ Health Services and Mental Health Administration | (073) 7 ☐ Department of Transportation<br>8 ☐ Department of Justice<br>Department of Health, Education and Welfare<br>9 ☐ NIH (National Institutes of Health)<br>10 ☐ Health Services and Mental Health Administration | |
| | (074) 11 ☐ Office of Education<br>12 ☐ Other H.E.W. – *Specify* ____<br>13 ☐ NASA (National Aeronautic and Space Administration) | (075) 11 ☐ Office of Education<br>12 ☐ Other H.E.W. – *Specify* ____<br>13 ☐ NASA (National Aeronautic and Space Administration) | |
| | (076) 14 ☐ NSF (National Science Foundation)<br>15 ☐ EPA (Environmental Protection Agency)<br>16 ☐ AEC (Atomic Energy Commission) | (077) 14 ☐ NSF (National Science Foundation)<br>15 ☐ EPA (Environmental Protection Agency)<br>16 ☐ AEC (Atomic Energy Commission) | |
| | (078) 17 ☐ AID (Agency for International Development)<br>18 ☐ Other agency or department – *Specify* ____<br>19 ☐ Don't know source agency | (079) 17 ☐ AID (Agency for International Development)<br>18 ☐ Other agency or department – *Specify* ____<br>19 ☐ Don't know source agency | |

## PART IV – OTHER INFORMATION

| | |
|---|---|
| **19a. At anytime during calendar year 1973, were you without a job AND actively seeking employment?** | (080) 1 ☐ Yes – *Continue with 19b*<br>2 ☐ No – *SKIP to question 20* |
| **b. For how many weeks were you seeking employment?** | (081) ☐ 1 week<br>☐ 2 weeks<br>☐ 3 weeks<br>☐ 4 weeks or more |
| **20. Based on my total education and experience, I now regard myself professionally as a (an) —** *Enter code and description from Reference List C* | (082) Code ☐☐☐<br>Description _____ |
| **21. Listed at the right, are selected topics of critical national interest. If you devote a significant proportion of your professional time to any of these problem areas, please mark the box for the one on which you spend the MOST time.** *Mark only one box* | (083) 01 ☐ Health<br>Education:<br>02 ☐ Teaching<br>03 ☐ Other<br>04 ☐ Environment protection, pollution control<br>05 ☐ Space<br>06 ☐ Crime prevention and control<br>07 ☐ Food production and technology<br>08 ☐ Energy and fuel<br>09 ☐ Other mineral resources<br>10 ☐ Community development and services<br>11 ☐ Housing (planning, design, construction)<br>12 ☐ Does not apply |
| **22. In the event that it is necessary to contact you to clarify some of the information you provide, may we contact you by telephone?** *If "Yes," please enter the telephone number(s) on which you can be reached.* | ☐ Yes → Area code ____ Telephone number ____<br>☐ No |
| **23. Please enter the name of a person at an address other than yours through whom you can be reached** | Name<br>Address *(Number and street)*<br>City ____ State or foreign country ____ ZIP code ____ |
| Print your name here | Date prepared |

* U. S. GOVERNMENT PRINTING OFFICE : 1973-736-879

# REFERENCE LIST A – MAJOR FIELDS OF STUDY

This list is to be used in answering question 2b about the field(s) in which you have obtained study or training. It is divided into two sections: Section I is a list of fields of academic study generally leading to bachelor's or higher degrees; Section II is a list of fields of study and training below that generally leading to a bachelor's degree.

Please scan the entire list, choose the appropriate answer for the question and then enter the code and description in the appropriate section of question 2b. If none of the categories listed below adequately describes what you were studying or being trained in, use the "Other" category (code 600 or 625) and enter a brief description of what you were studying in the space provided on the questionnaire.

## Section I – FIELDS OF ACADEMIC STUDY LEADING TO BACHELOR'S OR HIGHER DEGREES

| Code | Description |
|---|---|
| | **Biological and Agricultural Sciences and Related Fields** |
| 501 | Agriculture, business |
| 502 | Agriculture, general |
| 503 | Agronomy, field crops |
| 504 | Anatomy and histology |
| 505 | Animal physiology |
| 506 | Animal science |
| 507 | Bacteriology, virology, mycology, parasitology |
| 508 | Biochemistry |
| 509 | Biology, general |
| 510 | Biophysics |
| 511 | Botany, general |
| 512 | Dairy science (dairy husbandry) |
| 513 | Entomology |
| 514 | Farm management |
| 515 | Fish and game or wildlife management |
| 516 | Food science (food technology and processing, dairy manufacturing and technology, food industry) |
| 517 | Forestry |
| 518 | Genetics |
| 519 | Horticulture |
| 520 | Immunology |
| 521 | Microbiology |
| 522 | Plant pathology |
| 523 | Plant physiology |
| 524 | Soil science (soil management, soil conservation) |
| 525 | Zoology, general |
| 526 | Biological and agricultural sciences, other fields |
| | **Education** |
| 527 | Biological sciences education |
| 528 | Mathematics education |
| 529 | Physical sciences education |
| 530 | Trade and industrial training |
| 531 | Education, other fields |
| | **Engineering** |
| 532 | Aerospace, aeronautical, astronautical, and related fields |
| 533 | Agricultural |
| 534 | Architectural |
| 535 | Chemical, petroleum refining |
| 536 | Civil, construction, transportation |
| 537 | Electrical, electronics |
| 538 | Engineering sciences, mechanics, physics |
| 539 | Engineering, technology |
| 540 | Environmental/Sanitary engineering |
| 541 | General or unified |
| 542 | Industrial |
| 543 | Mechanical |
| 544 | Metallurgical, materials, ceramics |
| 545 | Mining, mineral |
| 546 | Naval architecture and marine engineering |
| 547 | Nuclear |
| 548 | Operations Research/Systems Engineering |
| 549 | Petroleum |
| 550 | Engineering, other fields |
| | **Health Fields** |
| 551 | Medicine or premedicine, and clinical medical sciences |
| 552 | Nursing (4 year or longer program) |
| 553 | Pathology |
| 554 | Pharmacology |
| 555 | Pharmacy |
| 556 | Health professions, other fields (4 year or longer program) |

| Code | Description |
|---|---|
| | **Mathematical Sciences** |
| 557 | Mathematics |
| 558 | Statistics and actuarial sciences |
| 559 | Computer sciences and systems analysis |
| | **Physical Sciences** |
| 560 | Astronomy |
| 561 | Chemistry |
| 562 | Geography |
| 563 | Meteorology |
| 564 | Physics |
| 565 | Physical sciences, general |
| 566 | Geology and geophysics |
| 567 | Oceanography |
| 568 | Physical sciences, other fields |
| | **Psychology** |
| 569 | Clinical |
| 570 | Educational |
| 571 | General psychology |
| 572 | Psychology, other fields |
| | **Social Sciences** |
| 573 | Anthropology |
| 574 | Area studies, regional studies |
| 575 | Economics, agricultural |
| 576 | Economics, except agricultural |
| 577 | Foreign service programs |
| 578 | Geography |
| 579 | History |
| 580 | Industrial relations |
| 581 | International relations |
| 582 | Political science or government |
| 583 | Public administration |
| 584 | Social sciences, general |
| 585 | Social work, social administration, social welfare |
| 586 | Sociology |
| 587 | Social sciences, other fields |
| | **Arts, Humanities, and Other Specialties** |
| 588 | Arts, general |
| 589 | Business and commerce, including accounting, hotel and restaurant administration, and secretarial studies |
| 590 | English and journalism |
| 591 | Fine and applied arts, all fields |
| 592 | Foreign language and literature, all fields |
| 593 | Geography |
| 594 | Home economics, all fields |
| 595 | Law or prelaw |
| 596 | Library science |
| 597 | Military science, including merchant marine deck officer |
| 598 | Philosophy, all fields |
| 599 | Religion and theology, all fields |
| 600 | Other *(Describe briefly under the applicable item on the questionnaire.)* |

## Section II – FIELDS OF ACADEMIC STUDY AND OCCUPATIONAL TRAINING RELATED TO PROGRAMS BELOW THE BACCALAUREATE

| Code | Description |
|---|---|
| | **Data Processing-related fields of study or training** |
| 601 | Computer programming |
| 602 | Computer operating |
| 603 | All other data processing fields of study or training |
| | **Engineering-related fields of study or training** |
| 604 | Drafting and design, all fields |
| 605 | Aeronautical technology |
| 606 | Architectural or building technology |
| 607 | Chemical technology |
| 608 | Civil technology |
| 609 | Electrical and electronics technology |
| 610 | Industrial technology |
| 611 | Mechanical technology |
| 612 | All other engineering-related fields of study or training |
| | **Science-related fields of study or training** |
| 613 | Agriculture |
| 614 | Forestry |
| 615 | Other science-related fields of study or training |

| Code | Description |
|---|---|
| | **Other fields of study or training** |
| 616 | Business and commerce-related fields of study or training |
| 617 | Craft (skilled) occupations-related fields of study or training (such as carpentry, bricklaying, tool and die making, etc.) |
| 618 | Educational-related fields of study or training |
| 619 | Home economics |
| 620 | Nursing and other health service-related fields of study or training |
| 621 | Operative occupations-related fields of study or training (such as machine operation, driving, inspecting, etc.) |
| 622 | Police technology or law enforcement |
| 623 | Sales and marketing-related fields of study or training |
| 624 | Service occupations-related fields of study or training (such as cook, beautician, firefighter, etc.) |
| 625 | All other fields of study or training *(Describe briefly under the applicable item on the questionnaire.)* |

## REFERENCE LIST B – KINDS OF BUSINESSES

This list is to be used in answering question 11 about the kind(s) of business or industry for which you worked. Please scan the entire list, choose the appropriate answer for the question and enter the code and description from this list. If none of the categories listed below adequately describes the kind of business for which you worked, use the "Other" category (code 731).

| Code | Description |
|---|---|
| | **Manufacturing** |
| 701 | Aircraft, aircraft engines, parts |
| 702 | Chemicals and allied products |
| 703 | Electrical machinery, equipment and supplies for the generation, storage, transformation, transmission, and utilization of electrical energy |
| 704 | Electronic apparatus, radio, television and communication equipment and parts |
| 705 | Electronic computers, accounting, calculating and office machinery and equipment |
| 706 | Fabricated metal products (except ordnance, machinery and transportation equipment) |
| 707 | Machinery (except electrical) including engines and turbines, farming and construction machinery, mining, metalworking and other manufacturing and service industry machines |
| 708 | Motor vehicles and motor vehicle equipment including trucks, buses, automobiles, railroad engines and cars |
| 709 | Ordnance, including manufacture of arms, ammunition, tanks, and complete guided missiles, space vehicles and equipment |
| 710 | Petroleum refining and related industries |
| 711 | Primary metal industries, including smelting, refining, rolling, drawing, alloying, and manufacture of castings, forgings and other basic metal products |
| 712 | Professional and scientific equipment and supplies |
| 713 | Other manufacturing including printing and publishing |
| | **Educational institutions** |
| 714 | College or university (offering at least a BA degree) |
| 715 | Junior college or technical institute |
| 716 | Medical school |
| 717 | Other educational institutions |
| | **Health Services** |
| 718 | Hospital or clinic |
| 719 | Other medical and health services |
| | **Other Kinds of Business** |
| 720 | Agriculture, forestry, and fisheries |
| 721 | Business, personal, and repair services |
| 722 | Construction |
| 723 | Engineering or architectural services |
| 724 | Finance, insurance, or real estate |
| 725 | Mining and petroleum extraction |
| 726 | Private, nonprofit organizations other than educational institutions and hospitals |
| 727 | Professional and technical societies |
| 728 | Research institutions |
| 729 | Retail and wholesale trade |
| 730 | Transportation, communication, or other public utilities |
| 731 | Other *(Describe briefly under the applicable item on the questionnaire.)* |
| | **Public Administration** (Include only uniquely governmental activities, such as the U.S. Postal Service, U.S. Air Force, State court, Department of Motor Vehicles, city building inspection, or city public welfare. For example, if you work for the U.S. Postal Service use code 733, Federal public administration; on the other hand, if you work at a Veterans' Administration Hospital, use code 718, Hospital or clinic; if you work at a State university, use code 714, College or university; if you work for a county road building agency, use code 722, Construction; if you work in a Defense Department research laboratory, use code 728, Research institution.) |
| 732 | Uniformed military service |
| 733 | Federal public administration |
| 734 | State public administration |
| 735 | Local public administration (city, county, etc.) |
| 736 | Other government |

## REFERENCE LIST C – OCCUPATIONS

This list is to be used in answering questions 12 and 20 about your occupational classification. Please scan the entire list, choose the appropriate entry and enter the code and description from this list. If you cannot find exactly the right entry, please choose the one that comes nearest to it. If none of the entries is at all appropriate, use the "Other" category (code 475) and enter a brief description in the space provided on the questionnaire.

| Code | Description |
|---|---|
| | **Engineers,** including college professors and instructors |
| 401 | Engineer, aeronautical and astronautical |
| 402 | Engineer, agricultural |
| 403 | Engineer, chemical |
| 404 | Engineer, civil and architectural |
| 405 | Engineer, electrical and electronic |
| 406 | Engineer, industrial |
| 407 | Engineer, mechanical |
| 408 | Engineer, metallurgical and materials |
| 409 | Engineer, mining and petroleum |
| 410 | Engineer, nuclear |
| 411 | Engineer, environmental and sanitary |
| 412 | Engineer, operations research systems |
| 413 | Engineer, other fields *(Describe briefly under the applicable item on the questionnaire.)* |
| | **Computer Specialist,** including college professors and instructors |
| 414 | Computer programmer |
| 415 | Computer systems analyst |
| 416 | Computer scientist |
| 417 | Other computer specialist *(Describe briefly under the applicable item on the questionnaire.)* |
| | **Mathematicians and Statisticians,** including college professors and instructors |
| 418 | Actuary |
| 419 | Mathematician |
| 420 | Statistician |
| 421 | Operations research analyst |
| | **Physical Scientists,** including college professors and instructors |
| 422 | Chemist |
| 423 | Earth scientists including geologists, geophysicists, etc. |
| 424 | Physicist, astronomer |
| 425 | Atmospheric scientist, meteorologist |
| 426 | Oceanographer |
| 427 | Other physical scientist *(Describe)* |
| | **Biological Scientists,** including college professors and instructors |
| 428 | Agricultural scientists, including foresters and conservationists |
| 429 | Biological scientist |
| 430 | Biochemist |
| 431 | Biophysicist |
| 432 | Medical scientist, excluding persons who are primarily medical practioners; see Health Occupations |
| 433 | Other biological scientist *(Describe)* |
| | **Social scientists,** including college professors and instructors |
| 434 | Economist |
| 435 | Psychologist |
| 436 | Sociologist or anthropologist |
| 437 | Other social scientist *(Describe briefly under the applicable item on the questionnaire.)* |
| | **Health Occupations,** including persons who are primarily practitioners. Persons engaged primarily in medical research, teaching, and similar activities use code 432, Medical scientist. |
| 438 | Physician or surgeon |
| 439 | Technician, dental |
| 440 | Technician, medical |
| 441 | Other health occupation *(Describe briefly under the applicable item on the questionnaire.)* |
| | **Technicians and Technologists,** except medical |
| 442 | Designer, electronic parts and machine tools |
| 443 | Designer, industrial |
| 444 | Designer, other |
| 445 | Draftsman |
| 446 | Surveyor |
| 447 | Technician, biological and agricultural |
| 448 | Technician, electrical and electronic |
| 449 | Technician, construction, highways, and architectural |
| 450 | Technician, mechanical |
| 451 | Technician, other engineering |
| 452 | Technician, physical science |
| 453 | Technician, other fields *(Describe briefly under the applicable item on the questionnaire.)* |
| | **Teachers** |
| 454 | Teacher, elementary school |
| 455 | Teacher, secondary school |
| 456 | Teacher, college and university, excluding engineering and science *(Engineering and science teachers see codes 401–437 above.)* |
| | **Administrators, Managers, and Officials,** excluding farm |
| 457 | College president or dean |
| 458 | Administrator or manager, scientific and technical research and development |
| 459 | Administrator or manager, production and operations |
| 460 | Administrator, manager, or official, all other, excluding self-employed |
| 461 | Self-employed proprietor |
| | **All Other Occupations** |
| 462 | Accountant |
| 463 | Attorney or judge |
| 464 | Sales worker |
| 465 | Clerical worker (such as bookkeeper, secretary, etc.) |
| 466 | Clergy |
| 467 | Craft worker (such as baker, carpenter, electrician, mechanic, repair worker) |
| 468 | Farmer (owner, manager, tenant, or farm laborer) |
| 469 | Fire fighter or police |
| 470 | Laborer, except farm |
| 471 | Librarian |
| 472 | Merchant or shopkeeper, self-employed |
| 473 | Operative (such as assembler, factory worker, miner, welder, truck driver, etc.) |
| 474 | Postal worker |
| 475 | Other occupations, not specified above *(Describe briefly under the applicable item on the questionnaire.)* |

# Other Science Resources Publications

| REPORTS | NSF No. | Price |
|---|---|---|
| Federal Support to Universities, Colleges, and Selected Nonprofit Institutions, Fiscal Year 1974 | 76-305 | In press |
| Expenditures for Scientific and Engineering Activities at Universities and Colleges, Fiscal Year 1974 | 76-303 | In press |
| Reviews of Data on Science Resources, No. 26, "Energy and Energy-Related R&D Activities of Federal Installations and Federally Funded Research and Development Centers: Estimated Funds and Manpower, FY 1973-75" | 76-306 | —— |
| Reviews of Data on Science Resources, No. 25, "Doctoral Scientists and Engineers in Private Industry, 1973" | 75-335 | In press |
| "Doctoral Scientists and Engineers in Private Industry, 1973" | 76-302 | In press |
| Projections of Degrees and Enrollment in Science and Engineering Fields to 1985 | 76-301 | In press |
| Federal Funds for Research, Development, and Other Scientific Activities, Fiscal Years 1974, 1975, and 1976, Volume XXIV | 75-334 | In press |
| An Analysis of Federal R&D Funding by Function, Fiscal Years 1969-1976 | 75-330 | $1.80 |
| Detailed Statistical Tables. Manpower Resources for Scientific Activities at Universities and Colleges, January 1975 | 75-329 | —— |
| Detailed Statistical Tables. Federal Support to Universities, Colleges, and Selected Nonprofit Institutions, Fiscal Year 1974 | 75-325 | —— |
| Detailed Statistical Tables. Federal Funds for Research, Development, and Other Scientific Activities, Fiscal Years 1974, 1975, and 1976, Volume XXIV | 75-323 | —— |
| Detailed Statistical Tables. Graduate Science Education: Student Support and Postdoctorals, Fall 1974 | 75-322 | —— |
| Research and Development in Industry, 1973. Funds, 1973; Scientists & Engineers, January 1974 | 75-315 | $1.95 |
| **HIGHLIGHTS** | | |
| "Industrial R&D Expenditures Rise to $22 Billion in 1974" | 76-300 | —— |
| "Graduate Science Enrollment in Fall 1975 is Up Again for Second Straight Year" | 75-335 | —— |
| "Employment of Academic Scientists and Engineers Increase From January 1974 to January 1975" | 75-331 | —— |